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# The Efficacy of Freshplace Project Manager's Use of a Stages of Change Assessment Form and Motivational Interviewing

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# The Efficacy of Freshplace Project Manager's Use of a Stages of Change Assessment Form and Motivational Interviewing

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The Efficacy of Freshplace Project Manager's Use of a Stages of  
Change Assessment Form and Motivational Interviewing

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## TABLE OF CONTENTS

Abstract .....	iv
Introduction .....	1
Background .....	3
Literature Review .....	32
Hypotheses .....	42
Methodology ... ..	43
Results .....	45
Discussion .....	53
Implications .....	62
Limitations .....	64
Conclusion .....	67
Appendices.....	69
References.....	94

## ABSTRACT

**Background:** Freshplace is an innovative food pantry in the North End of Hartford, Connecticut founded by three community organizations: Foodshare, Chrysalis Center, Inc. and the Junior League of Hartford, Inc. The agencies then partnered with the University of Connecticut to assist in the design and evaluation of the program. The goal of Freshplace is to provide a fundamental approach to the problem of hunger by addressing the root causes of poverty. Freshplace differs from traditional food pantries in two ways: recipients, referred to as members, select their own food and meet with a case manager on a monthly basis. The case manager, referred to as Project Manager, utilizes motivational interviewing (MI) while discussing a 12 topic assessment form that is based on the stages of change component of the Transtheoretical Model (TTM). The objective of the assessment is to measure the members' readiness to change behaviors that will increase their self-sufficiency and food security.

**Objective:** First, describe the areas in which members of Freshplace have need for services. Second, among those that identify a need for service, observe how ready they are to change their behavior to meet their goal. Third, determine if change occurs in members' level of readiness to change their behavior in each category. Fourth, create a brief manual describing the Project Manager's use of the TTM and MI at Freshplace.

**Methods:** Secondary analyses of data (n=135) collected from a TTM stages of change assessment form asked by a Project Manager at Freshplace. In addition, two in-depth interviews with Freshplace's Project Manager discussing the overall program, possible replication of the program and his use of the TTM stages of change assessment and MI.

**Results:** The goals of Other Assistance (i.e., utilities) (84.4%), Food (80.7%) and Health and Nutrition (73.3%) were chosen the most frequently of the 12 possible categories on the TTM stages of change assessment form. Daily Living Skills (11.1%), Transportation (5.2%) and Child Care (3.0%) were the least chosen areas to work on. To observe the change over time, analyses were conducted at the initial visit as well as 3 time divisions: 2<sup>nd</sup> visit (n=117), 3<sup>rd</sup> visit for those that attended up to 3 visits (n=59) and 5<sup>th</sup> visit for those that attended 5 or more visits (n=57). No significant difference was determined using Chi-Square analysis comparing each of the 12 categories and whether members attended up to 3 visits or those that attended 5 or more visits. Paired t-tests were then calculated comparing the average change score from the initial visit to the three time divisions mentioned above. Significant differences were found for majority of the 12 areas on the assessment from all three divisions: 6 of the 12 at 2<sup>nd</sup> visit, 8 of the 12 at 3<sup>rd</sup> visit and 9 of 12 at 5<sup>th</sup> visit. Comparisons were then observed between the three time divisions. For all goals, except Transportation, the average change score increased with additional visits to the Project Manager.

**Conclusions:** Freshplace's model of a Project Manager's utilizing a TTM stages of change assessment and MI appear to have a positive effect on members of the program. As a result of the novelty of the program and the assessment form, additional research is necessary to see if the positive effects continue and for how long it last. Additionally, evaluation needs to be made to compare if the significant differences determined in the data have clinically meaningful results.

## INTRODUCTION

Over 50 million Americans, one in every six, struggle with an insufficient amount of food each day.<sup>1</sup> Research has shown that federal and local food assistance programs can aid in supplementing the food supply for low-income individuals, therefore reducing the adverse effects often associated with food insecurity.<sup>2</sup> Yet even with these programs, food insecurity rates remain high.<sup>3</sup> Public and private food assistance programs combined, as currently configured, cannot address the amount of food insecurity in the United States. Confronting the root of the problem by addressing self-sufficiency needs to be an essential component to organizations that help those in need.

Food pantries were initially established as emergency food programs, to meet an immediate need, however, they have become permanent facilities that continue to grow in numbers. Foodshare, the food bank that serves the greater Hartford Connecticut region, has grown substantially. In the thirty years since its inception, Foodshare provides almost two hundred times as much food to ten times as many organizations. It serves more than 128,000 people in the Hartford area.<sup>4</sup> In addition to distributing food, its goal is to increase self-sufficiency and get people off the need for emergency food.<sup>4</sup> In 2007, Foodshare joined the Chrysalis Center, Inc. and the Junior League of Hartford, Inc., as well as the University of Connecticut to establish an innovative food pantry called Freshplace to foster long-term food security and self-sufficiency among residents of the North-End of Hartford, Connecticut.

The goal of Freshplace is to not only confront hunger, but to address the problems that co-occur with hunger and food security such as stable housing, benefits and utilities. As a key component of its approach, Freshplace has incorporated the Transtheoretical

Model (TTM) and motivational interviewing (MI) as the basis of addressing participants' readiness to change and their ability to become more self-sufficient. The program assesses behavior changes in 12 topic areas: food, entitlements/benefits, other assistance (i.e., utilities), education, employment, health care, health and nutrition, mental health and substance abuse, housing, child care, transportation, and daily living skills.

The objectives of this project are to:

- a) Describe the areas in which members of Freshplace have need for services.
- b) Among those that identify a need for service, observe how ready they are to change their behavior to meet their goal.
- c) Determine if change occurs in members' level of readiness to change their behavior in each category.
- d) Create a brief manual describing the Project Manager's use of the TTM and MI at Freshplace.

## **BACKGROUND**

### **I. Food security**

According to the United States Department of Agriculture (USDA), food security refers to the access by people, all of the time, to enough food for an active and healthy life.<sup>3</sup> Food security includes both physical and economic access to food that meets dietary needs. It is based on the principles of food availability, access and use. Households that are deemed food insecure were at some point in time in the past year unable to have enough food for one or more members of their household because of lack of resources including insufficient funds.<sup>5</sup>

The USDA distinguishes levels of food security through a range of high, marginal, low, and very low. For a household to be determined very low, food intake for at least one member of the household during the year was reduced and normal eating patterns were disrupted due to limited resources. An estimated 14.9% (17.9 million households) of American households were food insecure for at least some time in 2011, with 5.7 % of households being very low food secure.<sup>5</sup> The rate of being very low food secure in the United States had a statistically significant increase from 5.4% in 2010 to 5.7% in 2011. Households that meet qualifications for very low food security typically experienced the conditions of very low food security for 7 months of the year.<sup>5</sup>

In 2011, approximately 50.1 million people lived in food insecure households. Certain segments of the population had substantially higher rates of food insecurity compared to the national average. These groups include: households with income near or below the Federal poverty line, single parent head of households, and Black or Hispanic



households. Large cities and rural areas have higher rates of food insecurity than suburban areas.<sup>5,6</sup>

For Connecticut specifically, in 2009-2011, the prevalence rate of households that experienced low or very low levels of food security at some point in the year was 11.9% with 4.7% reporting very low food security.<sup>5</sup>

## **II. Food Assistance Programs**

### **a) Food Assistance Programs- Public**

The USDA domestic food and nutrition assistance programs play a large role in providing for many Americans, with about one in four households participating in at least one program at some point during a given year. The combined cost of these programs makes up over two-thirds of the USDA's annual budget, which was \$103.3 billion in 2011.<sup>3,6</sup> USDA Food and Nutrition Services (FNS) administers 15 domestic food and nutrition assistance programs.<sup>6</sup> The programs are regulated and standardized by the USDA and provide health and nutrition benefits to vulnerable populations, such as women, infants, children, the elderly and families. Fifty-seven percent of food-insecure households participated in at least one of the three largest Federal food assistance programs including the Supplemental Nutrition Assistance Program (SNAP), the National School Lunch Program and the Special Supplemental Nutrition Program for Women, Infants and Children (WIC).<sup>5</sup>

#### **i) SNAP**

SNAP, formerly known as the Food Stamp Program, provides a nutritional safety net for low-income families. It is the largest of the federal food assistance programs providing monthly benefits to buy food for eligible low-income families and individuals

at authorized stores. Qualifications and level of benefits are based on available household income, assets, basic expenses and household size. For most states, the gross income level for SNAP eligibility is 130% of the federal poverty level. The average individual in 2011 received \$134 a month.<sup>5,6</sup>

SNAP participation is at the highest it has ever been. In an average month in 2011, approximately 44.7 million Americans (14%) received SNAP benefits, which is an increase of 11% more than the previous year and over twice the rate from 2000. SNAP accounts for 73% of the USDA's food and nutrition assistance programs at a cost of over \$75 million in 2011.<sup>5,6</sup>

Over 22 million households nationally received SNAP benefits in 2011, with approximately 220,000 in Connecticut alone. A monthly average of close to 380,000 Connecticut residents participated in SNAP in 2011 with an average monthly benefit per person that was higher than the national average (\$142 compared to \$134).<sup>3</sup>

## **ii) National School Lunch Program**

The National School Lunch Program operates in over 100,000 public, nonprofit private schools and residential child-care facilities in the United States. In exchange for cash and some commodities, the USDA requires participating schools to meet Federal nutrition requirements. All the meals receive Federal subsidies and low-income students are eligible for free or reduced-price lunch. Children from families at or below 130% of the Federal poverty guidelines receive free meals and those from households with incomes between 130% to 185% are eligible for reduced-price lunch. In 2011 the program provided meals to an average of 31.8 million students each school day.

Approximately 58% of those lunches were free and 8% were at reduced prices. In fiscal 2011, the National School Lunch Program cost \$11.3 billion.<sup>5,6</sup>

### **iii) WIC**

WIC is a federally funded program to supplement healthy food, education, nutrition counseling and healthcare referrals to low-income pregnant, postpartum women, infants and children up to five years old. The USDA, FNS disperses federal grants to each state health department who then allocates the funds, usually in the form of vouchers, to participants to be used at authorized retailers. In 2011, an average of 9 million individuals per month received WIC benefits, with an average monthly cost of \$47 per person. While WIC participation was down by 2%, the average cost per recipient was up 13% resulting in an 8% increase in total cost of \$7.2 billion in fiscal 2011.<sup>5,6</sup>

### **b) Food Security and Public Food Assistance Programs**

The relationship between food security and food assistance programs is multifaceted and can be hard to measure. Programs are established to provide food and resources to individuals and households who do not have the financial means or resources to obtain an adequate amount of food. Recipients should appear to be more food secure than similar low-income households who do not receive benefits. Therefore recipients who receive food assistance and still report experiencing food insecurity may be those in the greatest need. Food security is often measured “at some point in the last year” which makes it unclear whether the respondent was food insecure at the same time they received the federal benefits. A USDA report on household food security in the United States in 2011 tried to control for this by asking a set of specific questions referencing the previous 30 days. According to the results, 52% of households that received SNAP, 49% of those

that received free or reduced-cost school lunch, and 44% of WIC recipients reported being food insecure. Eleven percent of SNAP recipients and 17% of households that had children who received free or reduced-cost lunch endorsed being very-low food insecure at some point.<sup>5</sup>

### **c) Food Assistance Programs- Private**

Even considering the amount of money spent on public food assistance programs, it is not enough to reduce food insecurity for everyone in the United States. Belief that disadvantaged people are exploiting taxpayers has been an issue with partisan politics for over 30 years.<sup>7</sup> The rejection of big-government, socialism, taxes, and liberal beliefs and policies has led to cuts in programs and funding for food, education, welfare and housing.<sup>7</sup> This controversy about spending federal money to support others has led to a growth in private food assistance programs. Private food assistance programs, also referred to as emergency food programs, are essential in providing food both directly and indirectly to many Americans. These charitable organizations are often grassroots responses to hunger in the community and rely heavily on volunteers. Organizations such as food banks, food pantries, soup kitchens and shelters comprise the private emergency food assistance programs established to respond to food insecurity in a community.

In 2009, Feeding America, formerly America's Second Harvest, the nation's largest organization of emergency food providers, reported that their network included approximately 33,500 food pantries, 4,500 soup kitchens and 3,600 emergency shelters.<sup>8</sup> Of the Feeding America affiliates, 68% percent of the food pantries, 42% of the soup kitchens and 15% of the emergency shelters do not have paid staff and rely on volunteers. Community members play an essential role in the survival of these assistance programs.

Faith based organizations make up approximately 55% of the Feeding America agencies.<sup>1</sup> This is not surprising as many religions have a moral code which includes assisting those in need.<sup>7</sup>

#### **i) Food Banks**

Food banks are charitable nonprofit organizations that collect, store and distribute food to agencies and organizations that make food available to those in need. Food donations come from every level of the food system: manufacturers, processors, grocery chains and other food suppliers. Companies, organizations and individual community members contribute to food banks through both monetary and food donations.<sup>8</sup> Food banks also receive resources from the USDA's Emergency Food Assistance Program (TEFAP). TEFAP provides commodity foods to each state, which in turn provides the food to food banks who distribute it to their affiliated agencies and organizations.<sup>3</sup>

Food banks do not provide directly to those in need, rather they act as a distributor and central supply point. After food is inspected to make sure it is edible and prior to the expiration date, it is dispersed to agencies and organizations including food pantries, soup kitchens and shelters.<sup>1</sup> Food banks are often regional and provide food for all direct providers in their area.

#### **ii) Food Pantries**

Food pantries are local operations that directly provide food to members in their community who are in need. There are two main types of food pantries, traditional and client-choice. Traditional food pantries pre-pack and distribute food to recipients. Staff or volunteers separate a variety of items and pack them in bags to be picked up by clients. Utilizers of traditional food pantries do not have the option to pick items they prefer.

Client-choice food pantries preserve individual autonomy and allow recipients to choose foods they prefer. They are designed similar to a grocery store where individuals have the opportunity to select items that they feel are best for themselves and their families.<sup>9</sup>

In both food pantry designs there are often restrictions to the amount of times the client can utilize the facility, typically only once or twice in a month. Client-choice food pantries may also have restrictions on the amount or specific types of food made available at each visit. For example, clients may be restricted to one protein, three vegetables, three fruits, etc.<sup>9</sup>

A survey asking food pantry customers in central Ohio about their ideal food pantry determined that consumers preferred choice in the foods they were given. Their two main justifications were to meet food preferences and to avoid food waste. Survey respondents felt that client-choice should include more fresh foods and less boxed or canned items.<sup>10</sup> Providing choice also inspires self-respect and preserves personal and cultural preferences of the individual.<sup>11</sup>

### **iii) Soup Kitchens**

Soup kitchens, sometimes referred to as community or emergency kitchens, provide prepared meals to individuals and families in need. Soup kitchens are not residential facilities; they simply provide free meals to members of the community experiencing food insecurity. They are typically staffed by volunteers and are often affiliated with a religious and/or community based organization. Soup kitchens usually obtain food from their area food bank and from donations from companies, agencies and individuals.<sup>3</sup>

#### **iv) Shelters**

Shelters provide housing on a short-term basis to low-income clients in need. In addition, shelters also often provide one or two meals a day. Shelters can be strictly for housing but are also often used in conjunction with social service programs such as substance abuse treatment, transitional living or for refuge for abused women and children.<sup>1,3</sup>

#### **d) Food Pantry Clientele**

Millions of Americans lack the sufficient resources and funds to obtain enough food for themselves and their families. Many of these households choose to go to food pantries to help get them through each month. Over 6 million households in the U.S. (5.1%) accessed emergency food from a food pantry one or more times in 2011.<sup>5</sup>

Results from a 2009 Feeding America (FA) survey estimated that their food pantries, soup kitchens and shelters were utilized by 37 million different individuals annually and 5.7 million weekly. Food pantries account for over 90% of the annual totals, followed by soup kitchens.<sup>8</sup> Table 1 below compares the 2009 survey to a similar FA survey from 2005.

**Table 1. Comparison of Feeding America Surveys in 2005 and 2009**

Year	Number of People Utilizing FA Services	Estimates of Clients in a Typical Week
2005	25.4 million	4.5 million
2009	37 million	5.7 million
Percent Increase	46%	27%

It is estimated that the number of different people utilizing FA emergency food programs has increased from 25.4 million in 2005 to 37 million in 2009, a 46% increase. An estimate of 4.5 million different clients were served in a typical week in 2005, compared to approximately 5.7 million different clients served in a typical week in 2009. This accounts for a 27% increase in 4 years.<sup>8</sup>

Results from FA's Hunger in America 2010 survey of food pantry respondents indicate that women utilize food pantries more often than men; 67% of clients were woman compared to 33%. Many food pantry recipients are working; 37.9% reported being in a household with one or more adults employed. Of clients surveyed, 35.5% reported not completing high school, while 38.4% reported achieving a high school diploma. Non-Hispanic whites comprised the largest racial and ethnic group at FA food pantries (40.5%), followed by Non-Hispanic blacks (32.2%) and Latino/Hispanic (21.8%).

Lack of income is a major factor driving households to food pantries. According to the Hunger in America 2010 survey, the average monthly income for pantry clients was \$990 (median: \$800), which is 71.4% of the federal poverty level. Responses for the main source of household income from the previous month included 32.3% from working, 3.0% from government welfare assistance and 46.8% from other government sources including 23.4% of that percentage for clients receiving social security. Ten percent of pantry clients had no monthly income.<sup>8</sup>

Having a place to live and the ability to prepare a meal are major factors in achieving self-sufficiency. The majority of food pantry clients (97.2%) from the FA survey reported having a place to live which includes a house, apartment, room, motel or



living with family or friends. An equal number of pantry respondents reported having access to a place where they could prepare a meal.<sup>8</sup> Although many clients reported having a place to stay, they also indicated having to make a lot of tough choices between food and other essential resources. Table 2 shows the percentage of people who reported experiencing these tough decisions.<sup>8</sup>

**Table 2. Choices FA Survey Respondents Reported Making Between Food and Other Essentials.**

Choices between Food and Other Essentials	Percent of Individuals in FA Survey Making Choice
Buying Food or Paying Utilities	46%
Paying Rent or Mortgage	40%
Medicine or Medical Care	34%
Transportation	35%
Gasoline	36%

Research has shown budgeting resources for food supplies can be a major issue for some households. For example, the feast and famine of food stamps can be a common problem. Families may feast in the beginning of the month when the food stamps are available and famine can strike at the end of the month when the food and resources are gone. SNAP recipients have reported that eating healthy food costs more money and that it is difficult to consider nutrition when the family is hungry.<sup>12</sup> Parents often sacrifice for their children, taking on a larger burden of the food insecurity.<sup>12</sup> Even families who try to stretch their food assistance often have to make tough decisions over whether to pay off bills, borrow money or buy more groceries.<sup>12</sup>

Households that rely on emergency food programs use a variety of coping strategies. Food insecure households with children deal with a lack of food by eating the same meal all week, reducing portion sizes, or sending children to a relative's or friends'

house during meal time. Families with low food security have also reported trying to buy in bulk, using multiple stores and coupons, and substituting more expensive ingredients for cheaper ones, such as pasta or potatoes for meat.<sup>12</sup> Millions of Americans now rely on food assistance, yet rates of food insecurity remain high. Perhaps it is time for a different approach.

One possible approach is for food assistance programs to empower and teach recipients to set goals and problem solve for difficulties that often plague low-income households. Poverty is a primary cause of food insecurity. Food assistance programs could address the underlying causes of poverty through providing services geared toward self-sufficiency. Case managers using the TTM may help individuals work toward goals to become self-sufficient.

### **III. Case Management**

#### **a) History of Case Management in Social Services**

Case management in the United States can be traced back over 150 years. As a result of industrialization, urbanization and immigration, basic forms of case management services began to arise in the 1860s in reaction to the growth and lack of coordination of health and human services for the poor and immigrants.<sup>13</sup> In 1863, Massachusetts established the first board of charities in the United States to organize public services and funds for those in need. Basic records began being kept for certain families and neighborhoods and there was advocacy focusing on the value and delivery of quality services for the poor.<sup>13</sup> In 1877, multiple agencies collaborated to form the Charity Organization Societies, the first major cooperative organizations to provide services to

the poor. In addition to aiding those in need, they focused on efficiency and cost-effectiveness and tried to prevent any duplication of services.<sup>13,14</sup>

In the early 1900s the United States Public Health Services established a rudimentary case management system. Its focus was on the community and services focused on population issues such as sanitation and immunizations. As the century continued, services for individuals in the community grew, but it was not until the Social Security Act of 1935 that funds were made available to support individual client's needs.<sup>13,15</sup>

Community health nursing has played a large role in developing modern day case management. The American Public Health Nursing Association was an organization that was founded with the principal of encouraging individuals to make healthy choices. They organized and promoted community resources and provided direct nursing care when needed. They functioned as the care coordinator and provider all at the same time. In 1909, Lillian Wald, the founder of the American Public Health Nursing Association, convinced Metropolitan Life Insurance to provide a visiting nurse case management system to delay death benefits. This new approach of utilizing visiting nurses as case managers kept people alive longer which benefited Metropolitan Life Insurance substantially. It is estimated that within 15 years the new case management model saved the company \$43 million.<sup>13,14</sup>

As the 20<sup>th</sup> century progressed, human service agencies began to form. Many of these agencies had a particular focus on low-income families and abused children. After World War II the Veterans Administration began to coordinate the care for returning

soldiers. This case management style of coordinating care for those in need became more accepted in the general population.<sup>13</sup>

The Civil Rights Movement and programs for individuals with mental illness brought major changes to the social service system, including an emphasis on social action, planning and policy.<sup>14</sup> New agencies were established that promoted empowerment to support equality. Case management aided this transition as well as encouraged accountability for quality services.<sup>13,14</sup>

In the 1960s the Federal government encouraged a continuum of care for individuals with mental illness that required care planning and coordinated services. Deinstitutionalization in the 1970s reinforced the necessity of case management services to help formerly institutionalized individuals deal with a complex network of systems. The Developmentally Disabled Assistance and Bill of Rights Acts of 1975 and 1978 refined the role of case management even further. Individuals with mental illness were mandated to be assigned a service coordinator who manages their services. The President's Commission on Mental Health in 1978 depicted case management as essential to providing coordination and care after many of the mental institutions were closed.<sup>13</sup>

Changes in the health care system, including the continual increasing cost of health care and the formation of health maintenance organizations (HMOs) and preferred provider organizations (PPOs), created a system in which case management was crucial to efficiency and controlling the costs.<sup>15</sup> Public and private agencies and organizations used case managers to coordinate patients through a complex system to monitor quality of treatment, avoid duplication of services and control the costs of services.<sup>13,15</sup>

## **b) Current Case Management in Social Services**

Case management is difficult to define and measure. The term “case management” was coined in the 1960s, however the term itself is a misnomer, because it is the services that are being managed and not the cases. The Case Management Society of America website defines case management as the “collaborative process of assessment, planning, facilitation, care coordination, evaluation, and advocacy for options and services to meet an individual’s and family’s comprehensive health needs through communication and available resources to promote quality, cost-effective outcomes.”<sup>16</sup> Case managers plan, seek, advocate and monitor services for their clients. They strive to improve client wellness and self-sufficiency.

The rising cost of health care, longer lifespans and the increased prevalence of chronic mental illness have led to case management in almost every aspect of social service settings including those from social work, nursing and rehabilitation counseling.<sup>14,17,18</sup> Although case managers work with diverse groups of people, problems and settings, they are increasingly becoming more specialized on individual populations (i.e., aging, disabilities, corrections, etc.).<sup>14</sup> Unfortunately, this diversity has led to a wide range of case management models and empirical data that can be very difficult to quantify together.<sup>13,18</sup>

Lamb<sup>18</sup> separated case management into three models: hospital-based, hospital-to-community based and community-based. Although these models differ in responsibilities, expectations and functions, they share the common goal of providing quality care and reducing cost. Hospital-based case management involves coordinating treatment within a specific facility. Hospital-to-community programs provide assistance to patients with

long term chronic conditions. Community-based models work with patients in the community to find quality cost-effective care.<sup>18</sup> Nurse and social worker team approaches have been found to be an effective way to coordinate care with the nurse focusing on the health and wellness of the client and the social worker utilizing his/her knowledge of community programs and socioeconomic issues that affect their patients.<sup>18</sup>

Responsibilities of case managers vary greatly depending on their setting. However in general, case managers want to improve individuals' self-care abilities by providing education, preventive care and health and wellness promotion. Case managers act as a liaison in a complicated health care and community system. They coordinate care, aid individuals in accessing and utilizing treatment and applying for federal, state and local assistance and programs.<sup>18</sup> This oversight of patient treatment plays a crucial role in increasing the efficiency of treatment and the reduction of cost.

Case managers utilize their knowledge of health care and social services in their area to coordinate specific care for individuals. They often work in collaboration with a number of human service professionals including: physicians, psychiatrists, psychologists, social workers, nurse practitioners, dieticians, etc. They are involved in "assessment, planning, implementation, coordination, monitoring, and evaluation of services to meet the client's health needs." <sup>19,20</sup>

Case management makes the treatment process more efficient for the client and the system which can lead to quantifiable cost savings.<sup>19</sup> Growing limitations on funding for both public and private organizations is increasing the interest of coordinating services to improve service quality and outcomes while simultaneously decreasing

costs.<sup>14</sup> In order to manage services for clients, case managers may employ the Transtheoretical Model or Stages of Change model to encourage behavior change.

#### **IV. Transtheoretical Model (TTM)**

The TTM assesses an individual's readiness to initiate and maintain a healthy behavior. It is an integrative model of behavior change based on key components of other theories, hence the title transtheoretical.<sup>20</sup> The model focuses on four core constructs: the stages of change, the processes of change, decisional balance, and self-efficacy. It is a model of intentional change in which the focus is on the decision making of individuals and their progression through a series of stages of readiness in making a behavioral change.<sup>21</sup> Individuals advance from pre-contemplation, not intending to change; to contemplation, considering the change; to preparation, actively planning to change; to action, making the change; to maintenance, efforts to sustain the change.

The TTM was initially applied to addictive behaviors such as smoking cessation and reducing alcohol and drug use but has been used to alter a number of behaviors. The original TTM was put forth by Dr. James O. Prochaska and Dr. Carlo DiClemente in 1977.<sup>22</sup> They felt the field of psychotherapy had become too fragmented and decided to reduce 300 theories of psychotherapy and behavior change to a manageable and practical combination that could help promote behavior change.<sup>23</sup> There are fifteen constructs that make up the TTM: five stages of change, eight constructs of decisional balance, the process of change and self-efficacy.<sup>24</sup> The eight constructs of decisional balance were later narrowed down to four by Velicer and his colleagues.<sup>21</sup>

The combination of theories served as a device that could be used to determine the underlying structure of change.<sup>25</sup> Their new model transformed how professionals

think about and facilitate change. The TTM reminds treatment providers that not everyone is ready for change and that interventions should be adjusted to the individual's current readiness. Prior models often saw behavior change as an event, such as quitting smoking or drinking, but TTM introduced the concept that individuals are at a wide range of readiness to change, with some not even considering a change. Prochaska's model also included a temporal dimension in which time plays a major factor in an individual's readiness to progress through the various stages of change.<sup>21</sup> Once the clinician determines the stage in which the individual they are helping is at, they then can motivate the client for change.<sup>22</sup>

The TTM has shown to be beneficial for a number of behavioral changes including: smoking cessation,<sup>26</sup> stress management,<sup>27</sup> weight management,<sup>28</sup> physical activity,<sup>29</sup> and dietary changes.<sup>30</sup> However, little research has been published concerning the use of the transtheoretical model on nutrition-related behavior change<sup>31</sup> or on case manager's use of the theory. Hence the importance of evaluating the effects of Freshplace's use of the TTM to promote self-sufficiency and food security of clients in this project.

#### **a) Stages of Change**

The stages of change behavior model is the most recognized and popular portion of the TTM. It is often used as a separate entity from the model. The stages of change model is an organized framework of five stages which classifies individuals' readiness to change behavior.<sup>24</sup> It involves a process to determine or monitor an individual's progress over time through a series of five stages: pre-contemplation, contemplation, preparation, action and maintenance. The initial stages: pre-contemplation, contemplation and part of



preparation involve behavioral intention aspects of the model. The actual behavior change portion of the model involves the other half of the preparation stage as well as the action and maintenance stages of the model. Each stage is a period of time, in which individuals use specific tools and processes to move to the next stage.<sup>21,24,32</sup>

**Figure 1. TTM's Stages of Change Model**

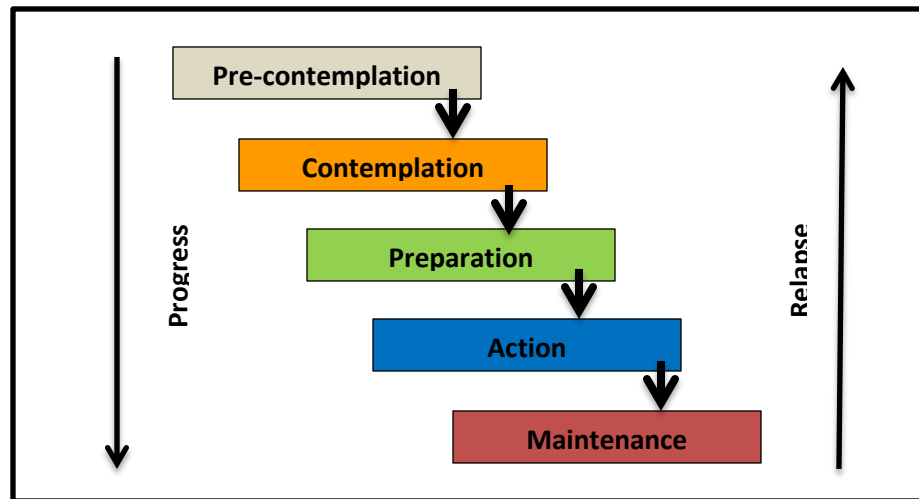


Figure 1 above depicts the TTM's Stages of Change Model. Individuals tend to progress from pre-contemplation towards maintenance, however relapse is possible at any stage and individuals may even regress back multiple stages.

The following are descriptions of the five stages:<sup>21,24,32</sup>

***Pre-contemplation:*** The individual has no intention to change behavior in the foreseeable future, at least the next six months. Most people at this stage are unaware of their problem and/or do not see it as a problem. They are often uninformed or under-informed about the consequences of their behavior or may be demoralized by multiple failed attempts to alter the behavior. They often avoid conversations and information about the topic and have traditionally been seen as unmotivated or resistant individuals.

***Contemplation:*** An individual is aware that there is a problem, however is not seriously considering doing anything about it immediately. Contemplators are aware of the problem and know the health benefits of changing their behavior, but often feel overwhelmed by the problem and the effort, energy and sacrifice necessary to alter that behavior. They have trouble weighing the cost versus benefit of changing and sometimes become ambivalent for an extended period of time. There is often a desire to potentially modify a behavior in the future, typically within six months, but not immediate action.

***Preparation:*** The individual is intending to take action in the next 30 days and has often begun small behavioral changes. They typically have a plan of action, such as joining a gym or talking to a physician or counselor. These individuals want to change but have not reached the point where they have started to make a significant change.

***Action:*** At this stage an individual makes the change by modifying their behavior, experiences and/or environment. Often a significant investment in time and energy is made to make the change. The action stage lasts from the first day of change up until 6 months of actively altering the behavior. Treatment providers and individuals themselves need to be watchful of relapses of the behavior during the action stage.

***Maintenance:*** At this point in the process individuals work to keep the change and prevent relapse into the old behavior. Maintenance occurs after the individual has successfully made the behavioral change for over six months. As time progresses they are increasingly less likely to relapse and become more confident in their ability to continue their change.

***Termination:*** Termination is a sixth stage that is sometimes included as part of the five-stage model. At this stage the individual has successfully made the behavior

change essentially permanent, has zero temptation to regress to their past behavior and has full confidence that they can maintain the new behavior. The termination stage is often not included in the model because it is considered an ideal goal that may not be practical for most people.<sup>33</sup> For example, recovering alcoholics may never consider themselves in termination because they may always have cravings and thus potential relapse as part of their life forever. In this instance, the individual can be in the maintenance stage for years but still fall to temptation and relapse. Termination would require minimal risk from relapse.<sup>25,33</sup>

The initial Stages of Change Model was linear with individuals moving sequentially through the stages. However, Prochaska and DiClemente realized early on that relapses are inevitable with many behavior changes and thus the model incorporated a regression portion.<sup>33</sup>

**Relapse:** Relapse or regression is not one of the stages of change, but is a regular component of behavioral change. Individuals can revert back to an earlier stage at any point in time during the process, sometimes even falling back multiple stages.<sup>21</sup> It is common for people to skip stages both forward and backward while transitioning through the stages.<sup>33</sup>

Progression through the stages varies greatly for everyone and can even vary for different behaviors for the same person. Individuals progress through the stages at different rates and may even become stalled at a stage for an extended period of time. It is common for people to relapse to an earlier stage or cycle through the stages numerous times prior to making a change and exiting the cycle. For instance, smokers will often cycle through quit attempts three to four times prior to finally quitting and exiting the

cycle.<sup>25,33</sup> After assessing an individual's present stage, it is important to utilize the correct approach to help them make progress towards the next stage or maintain the behavior change.

#### **b) Process of Change**

The process of change involves how people make the adjustment between the different stages. It often involves a number of techniques, methods and relationship stances that vary at each stage.<sup>32</sup> There are ten cognitive and behavior processes of change: consciousness raising, dramatic relief, self-evaluation, environmental evaluation, self-liberation, helping relationships, counter conditioning, contingency management, stimulus control, and social liberation.<sup>21,33</sup> TTM suggests that different processes are used at different points in time throughout the stages. Table 3 below defines the ten processes of change. Cognitive approaches such as consciousness raising may be used in an earlier stage (pre-contemplation and contemplation) to identify consequences of the behavior. Behavioral techniques such as self-liberation would be beneficial at later stages to help make the commitment to change.<sup>19,25</sup>

**Table 3: 10 Processes of Change**

1) Consciousness Raising	Efforts by the individual to increase their knowledge and awareness of the problem behavior.
2) Counterconditioning	Positive behaviors are developed to replace the problem behavior
3) Dramatic Relief	Individuals experience and show the feelings and emotions they had with the problem behavior as well as feeling about the potential new behavior

4) Environmental Re-evaluation	Review the impact the problem behavior had on one's environment (both physical and social)
5) Helping Relationships	Trusting and accepting the help and support of individuals who can help with the behavior change
6) Reinforcement Management	Receive rewards for positive behavior change from oneself or someone else
7) Self-Liberation	Choice and commitment to make the behavior change with self-confidence
8) Self- Reevaluation	Review the emotional and mental feelings and processes of going through a change in behavior
9) Social Liberation	Knowledge and acceptance of an alternative in the community that differs from the problem behavior
10) Stimulus Control	Gain control of specific 'triggers' in the environment that could cause relapse to the problem behavior, such as avoiding certain people/places/things or changing the environment (remove things or add good 'triggers')

Based on material from The HABITS Lab at UMBC

The ten processes of change are cognitive and behavior processes that aid in assisting the behavior change. Different processes need to be utilized at different stages to effectively increase a client's readiness to change.

### **c) Decisional Balance**

In order to assist a client through undergoing a behavior change, it is important to understand their decision making processes as they move through the stages of change. The decision making model that is incorporated in the TTM is referred to as decisional balance.<sup>33,34</sup> It is based on the decision-making model of Janis and Mann in which decision making is a process in which the pros and cons can be compared on a decisional balance sheet. It measures both the cognitive and motivational aspects of decision making.<sup>24</sup> The original decision balance sheet was comprised of eight components made up of four factors that were each distinguished by the advantages and disadvantages of the decision. This sheet compared the pros and cons for: gains for self, losses for self, gains for significant others, losses for significant others, approval from significant others, self-approval, self-disapproval, approval from others and disapproval from others.<sup>34</sup>

In 1985, Velicer and his colleagues simplified Janis and Mann's eight component decisional balance sheet to a four cell format in which the advantages and disadvantages were summarized to compare the pros and cons of the current behavior and of a changed behavior. This reduced model was shown to be successful in behavior change for smoking cessation and has been replicated across a number of health behaviors.<sup>21</sup>

Decisional balance sheets within TTM can be an effective way to aid individuals as they make progress through the various stages of change. Pros increase and cons decrease as individuals advance from pre-contemplation to maintenance. The disadvantages outweigh the advantages in pre-contemplation when an individual is not even considering change, however, by the time the individual has reached the action stage the pros outweigh the cons. The contemplation stage is often considered the stage in

which the pros and cons are equal, where the individual has the desire to potentially change but not the immediate intention.<sup>35</sup> When the individual is maintaining the behavior change, their decisional balance sheet would favor the advantages of continuing the change compared to the disadvantage of not having changed.<sup>21</sup>

#### **d) Self-Efficacy**

Self-efficacy is an individual's self-confidence in their ability to perform a specific behavior. It is based on Bandura's Social Cognitive Theory and measures how confident individuals are with themselves in making behavior changes in different situations.<sup>24</sup> It is both situational and task specific and can help gauge whether an individual is ready to make a behavior change.<sup>33</sup> Similar to decisional balance, self-efficacy varies throughout the stages, with confidence increasing and temptation decreasing as one progresses through the stages. The action stage is often the point in which a person starts receiving reinforcement as an outcome of their efforts and as a result gains more self-confidence in their ability to continue the behavior change. A technique often utilized with the TTM to increase client self-efficacy and encourage health behavior changes is motivational interviewing.

### **V. Motivational Interviewing**

Motivational interviewing (MI) is a client-centered approach to encourage behavior change through assisting individuals to resolve ambivalence to change.<sup>31</sup> It has been a very popular approach since Miller and Rollnick first published their book in 1991. MI was initially used with addiction treatment but it quickly spread to other areas from psychotherapy to primary health care and public health.<sup>36</sup> Part of the appeal of MI is

that it is a much briefer treatment approach than other approaches and therefore can be more cost-effective.<sup>37</sup>

MI is often used in conjunction with the TTM to facilitate behavioral changes.<sup>22</sup> TTM provides the conceptual model of how and why changes occur and MI is a clinical tool that can be used to enhance personal motivation for change. MI is not a theory of change but can be used with TTM, as well as with other behavior change models or by itself.<sup>22</sup>

MI is most effective in early phases of the stages of change model when individuals are ambivalent about their behavior and not quite ready to change compared to those in the action stage who are in the process of changing.<sup>22,37</sup> Knowledge can lead to change, however, without motivation it is unlikely any change would occur. Knowledge combined with motivation reduces an individual's resistance and brings about change.<sup>36</sup> Increasing a client's motivation in the beginning stages can be an essential component in having an individual progress to actual behavioral change.<sup>37</sup>

MI respects individual autonomy. Change is not forced upon an individual; rather an individual needs to have an inherent motivation to make a lifestyle change. MI is only effective when applied to one's own interests, not the interests of another.<sup>22</sup> Clinicians need to determine how the person feels about the specific behavior and meet them where they are as opposed to trying to force them to change. The person has to look within themselves to find the desire to want to change a behavior.<sup>38</sup> An MI session is client-centered in which the client speaks more than the clinician, providing a range of discussion points to reflect upon.<sup>22</sup> Clinicians can help lead the way, but only the



individual has the power to bring about change and therefore the responsibility of change falls upon the client.

Counselors' main task in MI is to be an active listener and try to understand what the individual is saying. When they need to ask a question to help guide the conversation, it should be open-ended so as not to leave awkward responses of just a 'yes' or 'no'.

Summarizing what the person is saying and acknowledging their statements helps build rapport and is part of the process of having the individual realize the necessity to take a step to the next stage of change.

Changing behaviors often comes with a lot of internal and external resistance.<sup>31,38</sup> MI is non-combative and clinicians need to calmly redirect resistance. If an individual becomes angry or upset about a certain topic, it is best for the counselor to use reflective listening and acknowledge the person's feelings. Reflective, nonjudgmental, simple summary statements such as "It seems like you were bothered by ...." show that the counselor is listening and understands the client's resistance to the topic.<sup>31,38</sup> The non-confrontational principles behind MI make it a suitable approach to the non-treatment seeking population.<sup>37</sup>

The Project Manager at Freshplace utilizes his knowledge of MI to encourage self-reflective thinking with each member (personal communication, March 13, 2013). This self-focused approach aids in progression through the stages of change and can lead to a change in behavior.

## **VI. Freshplace- A New Type of Food Pantry**

In 2005, three community organizations in Hartford, Connecticut: Foodshare, Chrystalis Center, Inc., and the Junior League of Hartford, Inc. decided to collaborate to

develop a new type of food pantry called Freshplace. The goal of Freshplace is to confront the problem of hunger as well as some of the co-occurring problems associated with hunger and food security. In 2009, the three founding organizations formed a community-university partnership with the University of Connecticut to help design and evaluate the program. In July 2010, Freshplace opened.

Traditional food pantries typically provide pre-packaged bags of food to individuals and families that are in need of emergency food supplies. They often only provide food and do not offer additional services, such as referrals to other programs (i.e., housing assistance, mental health/substance abuse treatment, etc.) or help in applying for state or federal assistance (i.e., SNAP). Freshplace is different in two ways. First, it is a client-choice food pantry where members can choose their own food twice a month. Second, Freshplace offers case management services that help people obtain additional services as well as achieve a variety of goals to make them more self-sufficient.

Freshplace members meet with a Project Manager once a month to develop and monitor their individualized Freshstart Plan, which tracks personal goals for becoming food secure and self-sufficient. Initially the Project Manager used more of a classic case manager style of writing detailed notes on each member. To increase the effectiveness and efficiency of the one-on-one sessions, the Project Manager, his supervisor, and the primary faculty member from the University created the 1-5 scale stages of change assessment form. The implementation of the new form began in January 2012 and was immediately used for all active members.

At each meeting, the member and Project Manager discuss goals listed on the TTM stages of change assessment form. The Project Manager uses the assessment as a

tool to determine each member's readiness to change in a number of key topic areas as well as expectations and potential barriers to achieving those goals. The Project Manager then utilizes a number of techniques, including MI, to encourage progress toward behavior change and the overall goal of self-sufficiency and food security. At the end of each session, members leave with a set of small, realistic goals that help lead to targeted behavior change.

At every session the Project Manager sits down with each member and discusses what goals they feel they have worked on and where they are on the scale for each goal. Together they refer to previous evaluations to see if a change has occurred. The Project Manager uses nonjudgmental, reflective statements to help the members make their own choice of where they feel they should be on the stages of change form. The Project Manager felt that the "visual 1-5 continuum" of the stages of change scale works well with members (personal communication, October, 5 2012 and March 13, 2013). Using MI in conjunction with the TTM appears to be an effective technique in increasing self-sufficiency among Freshplace clients.

After determining individual needs through the assessment form, the Project Manager is able to tailor services by providing referrals to agencies, organizations and other public assistance programs such as SNAP and energy assistance. The Project Manager also encourages members to select goals by using the resources available on site. For example, cooking and shopping classes are made available to members as well opportunities to meet with dieticians who provide nutrition education on site. Research has found that developing food management skills can be a source of building self-esteem.<sup>53</sup> The mental and physical ability to find affordable food and prepare meals has

been linked with higher levels of food choice capacity.<sup>54</sup> Therefore utilizing the resources available at Freshplace can increase members' self-confidence.

Freshplace also provides individuals the opportunity to use computers to create and work on resumes as well as search for jobs.<sup>11</sup> The resources available at Freshplace along with the fact that it is a client choice food pantry make it an ideal forum to encourage behavior change that increases self-sufficiency.

When interviewed, Freshplace's Project Manager, stated that the social interaction that took place on site, especially within the various classes, was effective in helping people make progress (personal communication, October 5, 2012).

The topic areas covered through the Freshplace Member Assessment are: food security, entitlements/benefits, other assistance (i.e., utilities), education, employment, health care, health and nutrition, mental health and substance abuse, housing, child care, transportation, and daily living skills. The assessment tool was based on two existing surveys; the Missouri Family Self-Sufficiency Scale<sup>39</sup> and the USDA 18 item Household Food Security Survey Module,<sup>3</sup> and through conversations with individuals involved in the planning, implementing and evaluation of Freshplace. The Missouri Family Self-Sufficiency Scale was created to: 1) assist in assessing self-sufficiency progress of families served by case management programs, and 2) provide information for program evaluation.<sup>39</sup> The Missouri scale is based on the idea that self-sufficiency should not be based just on financial well-being of a family, but rather also incorporate other parts of daily life including education, housing, life skills and transportation. The USDA's 18-item survey for household food security measures individuals and families' general access to and the availability of food for themselves and their family.

## **LITERATURE REVIEW**

### **a) Transtheoretical Model Effectiveness**

The TTM describes the cognitive and behavior steps individuals use to make health behavior changes.<sup>31</sup> The stages of change portion of the TTM, in particular, is a prominent model in the field of health behavior change because the concept of knowing what stage an individual is at brings structure and organization which can help explain and predict how behavior change could occur. Programs can then be designed to meet individuals at the stage he or she is currently at.<sup>25</sup>

The TTM has been criticized for the possibility of internal conflict since it combines theories that contrast with each other. For example, it involves theories that assume all behaviors are a result of internal biological drives, as well as theories that assume that behavior is controlled by external environmental factors.<sup>24</sup> The TTM approach, however, recognizes that there are numerous strategies that could affect human behavior, many of which may have contradicting views. In the TTM, the integration of specific theories is used as part of the process or principles of change.

The specification of time periods in the TTM's stages of change model has been criticized because some feel that the stages can be viewed as discrete variables in which the time periods are arbitrarily determined, such as the six months of the Action stage prior to Maintenance. However, supporters of the TTM have stated that the six month time period was determined with empirical data.<sup>24</sup> It has also been proposed that without the distinction of a set time period, there would be nothing to determine when the transition from one step to another would take place. Without an accepted time period

there would be a lack of consistency in implementing the model and therefore make it hard to determine its effectiveness.<sup>24</sup>

The TTM has also been criticized for changing overtime. The stages of change model has changed a number of times since it began, eliminating the second stage at one point and then at a later point replacing it by a different version of the same stage. This adjustment in stages has led to some confusion and conflict. However, changes were always made with empirical data and refinement is necessary when supported by evidence.<sup>24</sup> Many theories are modified over time as empirical evidence might suggest the need for change. By not adapting to necessary changes, a theory or model would become less effective and eventually unusable.

A review study of randomized clinical trials of TTM-based interventions found that those that were poorly designed due to limited application of the model were not effective.<sup>40</sup> Misinterpretation and oversimplification of the TTM may leave out factors that influence behavior change and therefore potentially can lead to poor outcomes. TTM has been criticized for being too complex, making it programmatically difficult to fit in all of its components. The most common oversimplification of the TTM is to reduce it to only the stages of change variable.<sup>23,24</sup> Although it is the most popular component of the TTM, it is not the only part. The process of change, decisional balance and self-efficacy are all part of the model and unfortunately are often minimized or left out completely. One of the main problems with research related to the TTM for health behaviors is that it is not uncommon for interventions to be based on the stages of change alone.<sup>25,41</sup>

Some researchers have questioned the evidence supporting the TTM. For instance, Herzog<sup>42</sup> stated that the TTM in health promotion is not based on sufficient

analyses of scientific evidence and that TTM is widely accepted in spite of a lack of outcomes. Herzog believes that the popular success of the model interfered with scientific progress and the adaptation of other models. Some critics believe that few studies have demonstrated the behavioral health outcomes associated with the stages of change and that research typically looks at forward change progression as opposed to actual changes in behavior.<sup>25</sup> Stage progression is not synonymous with the guarantee of a behavior change. Critics have also stated that TTM focuses on individual behavior change and does not fully take into account ecological perspectives such as interpersonal, organizational and community factors that influence behaviors.<sup>25</sup>

Some critics have also argued that there is a lack of standardization in the assessment tools and definitions used. The lack of consistency in how to test the model created a problem for evaluating the TTM applications.<sup>25,42</sup> Critics believe that standardization is necessary at the operational level. Currently an accurate and universal stage recognition classification does not exist. A variety of different algorithms and methods for obtaining stage classification are being used which leads to inconsistencies in methodologies and assessment of the stages and definitions. This variability leads to questions about the external validity and predictive power of using TTM for health behaviors.<sup>25</sup>

DiClemente<sup>41</sup> responded to critics by stating that many of them focus on the stages of change assessment as opposed to the whole model and are therefore missing essential elements of the TTM. He states that stages are “states and not traits... and individuals can move between them quickly, engaging and abandoning some of these tasks even within a single session of intervention.”<sup>41</sup> Prochaska et al.<sup>24</sup> responded to

criticism by acknowledging that TTM is based more on descriptive research rather than causal research, however, that is a reality for most behavior change theories and environmental contingences are difficult to control.<sup>24</sup>

If replication is an indicator of acceptance and success of a model or theory, than the TTM has been very successful. Pendlebury stated that the top three most cited authors in health psychology are the developers of TTM.<sup>24</sup> The TTM has been shown to be effective across a number of behaviors. Hall and Rossi<sup>43</sup> conducted a meta-analytic examination of 120 datasets from studies conducted between 1984 and 2003. These studies covered 48 different health behaviors from nearly 50,000 participants in ten countries. The authors examined the strong and weak principles of change that are correlated with the pros and cons within the progression through the stages of change. Prochaska<sup>33</sup> reported a measurable difference within the stages of change by stating that there is a one standard deviation increase in the pros from pre-contemplation to the action stage and that the cons decreased by half a standard deviation. Therefore, the increase of the pros of change is twice the decrease for the cons as an individual moves from pre-contemplation to action.<sup>23,43</sup> Hall and Rossi<sup>43</sup> discovered that Prochaska's assessment of the magnitude of pros and cons was consistent for the 48 health behaviors they reviewed. These findings indicate the applicability of TTM across a variety of health behaviors.

The TTM is often associated with motivational interviewing because of their similarities in observing an individual's readiness to change a behavior and for the fact that both processes grew in the 1980s.<sup>23</sup> Although similar, the TTM and MI differ in the fact that TTM looks into the process, behaviors and experiences that take place during behavior changes while MI is a method of counseling used to help motivate individuals to



change their behavior.<sup>22</sup> The TTM stages of change variable brought upon the realization that tools like motivational interviewing were necessary to help facilitate change.

#### **b) Motivational Interviewing**

The efficacy of MI has been shown in multiple systematic reviews. Noonan and Myers<sup>44</sup> reviewed 11 clinical trials and determined that MI is an “effective, efficient and adaptive therapeutic style worthy of further development, application and research.”<sup>37,44</sup> A systematic review by Dunn et al.<sup>45</sup> found that MI was particularly effective in substance abuse treatment when utilized by counselors who were not addiction specialists. Dunn et al. concluded that more research needed to be conducted concerning the mechanisms of MI and who it would be most appropriate for.<sup>45</sup>

Brian Burke and his colleagues’ review<sup>46</sup> of MI determined that MI was beneficial compared to no treatment and/or placebo for problems related to alcohol, drugs, diet and exercise. According to the authors, MI was not shown to be as effective for treatment of smoking or HIV- risk behaviors. The authors also found that MI yielded very good results when utilized in pre-treatment prior to Cognitive Behavioral Therapy or inpatient treatment.

Project MATCH (1993) is one of the largest psychotherapy outcome studies conducted to date. Its overall objective was to compare outcomes for problem drinkers receiving three different manually guided treatments: Twelve-step Facilitation Therapy (TSF), Cognitive-Behavioral Skills Therapy (CBT) and Motivational Enhancement Therapy (MET).<sup>36,37</sup> MET is a less intensive form of therapy that is based on MI but includes structural feedback to the clients.<sup>37</sup> The overall result for Project MATCH showed that there was not any substantial difference through the client-treatment

matching approach and that there was little difference between treatment categories and that all three treatment groups showed significant improvements. The MET group did however show more improvement at the one- and three-year follow ups with clients who measured high on anger.<sup>36,37</sup> MET also showed equivalent outcomes to CBT and 12-step in a shorter time frame. In addition, the project revealed that clients lower on the stages of change model performed better with MET than with CBT, with the opposite being true for clients in the action stage of change.<sup>37</sup>

More recently Burke and Lundahl<sup>36</sup> published an article that studied the effectiveness and applicability of MI through the review of four meta-analyses.<sup>36,46-48</sup> The authors divided the four meta-analyses into two groups: studies that used a “weak comparison group,” meaning the comparison groups were on waitlists or receiving no treatment and “strong comparison groups,” studies that compared MI to other forms of treatment (i.e., CBT). The results indicated that MI was significantly better than the weak comparison group and equal or better than strong comparison groups. The analysis compared the effect size between MI in regards to a number of outcomes from alcohol and substance use to risky behaviors, diet and parenting practices. Overall, MI was shown to have a positive effect in changing alcohol and most substance use behaviors. However, there is not yet enough empirical evidence to make that conclusion for other problem areas.<sup>36</sup>

The meta-analysis determined that MI did not seem to be as effective when performed in group treatment. Certain aspects such as a client-centered focus did not seem to work well in group settings. It also showed that when MI was administered based on a treatment manual, there were weaker or even poor results. It was suggested that the

use of a manual may lead clinicians to push for change too early, therefore creating client resistance.<sup>36</sup> The analysis showed that level of education or training of the clinician did not significantly influence outcomes, suggesting that it can be effectively developed and used by a wide range of practitioners. Finally, the meta-analysis found it remains unclear what the most effective training method for learning MI is. MI workshop-style training can have positive results on some of the skills, but often omit some of the techniques. Unfortunately, many of the studies did not observe the effect of client outcomes. Trainings increase knowledge and skills, but more research is needed to determine the most effective ways to teach practitioners how to administer MI. Multiday workshops followed by ongoing supervision and coaching seem to have the best results.<sup>36</sup>

### **c) Case Management in Social Services**

Case management services tend to be very specialized and the majority of the literature on case management focuses on providing care to populations with specific chronic diseases (i.e., HIV, diabetes, depression). The variety of specializations has led to disputes over the official definition of case management and the establishment of standard practices.<sup>49</sup> However, the role and responsibilities of a case manager remain relatively consistent. Case managers assess, plan, implement, coordinate, monitor and evaluate clients' needs. They coordinate services and resources to establish efficiency of services to improve quality of life for their clients while reducing cost to themselves and society.<sup>13,17,50</sup> The diversity of the roles and responsibilities of case management can make it hard to evaluate. Additional research of the effectiveness of case management and the variety of populations they serve is needed.<sup>14</sup>

A literature review of studies of care coordination and other health management programs by Musich and Paralkar<sup>50</sup> found that case management reduced re-admissions, mortality, ER visits and hospitalizations. When the authors examined results for health promotion studies specifically, they found a reduction in medical and pharmaceutical costs for participants compared to non-participants.<sup>50</sup> The more health risks an individual has the higher the medical cost, therefore health management strategies that are effective in changing health behaviors have been shown to improve health status, thus reducing medical costs. Empirical data have revealed that comprehensive health promotion programs can improve health outcomes, which in three years may result in medical cost savings of 3:1.<sup>50</sup> However, the cost savings from health promotion programs is typically not immediate and it often takes years to see its effect. Review of health promotion and disease management programs at worksites found that to be effective, programs need to be at least 3 to 6 months in duration and cost-effectiveness would not be seen for 3-5 years.<sup>50</sup>

Case managers can educate, empower and oversee the adherence of health guidelines in helping individuals change lifestyle behaviors that will improve the quality of their life.<sup>51</sup> Successful implementation of a case management program is reliant on properly trained staff, integration of services, appropriate levels of decision making and referral, using information systems as well as measuring outcomes and costs.<sup>51</sup>

Encouraging client autonomy is an important function of case managers. A study that reviewed the role of case managers' effect on the empowerment and de-medicalization for people with psychiatric disabilities found that self-determination and personhood were common themes that were brought up by both consumers and

professional respondents.<sup>17</sup> Case managers develop strong relationships, encourage client driven services, use imaginative and flexible means to meet clients' needs and give clients a voice to empower them to succeed and become more self-sufficient.

#### **d) Case Management and the Transtheoretical Model**

Case managers often have to encourage lifestyle changes for their clients to aid them in gaining autonomy. Unfortunately insufficient evidence exists on case manager's use and/or the effectiveness of health behavior interventions or models.<sup>49</sup> Limited research has been published-to-date in peer-reviewed journals on case managers' use of the TTM to encourage behavior change. Research is available on therapists, counselors, nurses and other healthcare and social service professionals utilizing the TTM with clients, but not case managers' use of the TTM. A literature review that utilized large academic databases, including PubMed, Scopus and PsychInfo, for "case management" and the "transtheoretical model" resulted in very few results. Multiple searches combining different versions of case management (i.e., case manager, case manage) and entering "stages of change" in place of "transtheoretical" resulted in essentially identical results. At the conclusion of the search five articles were relevant, but only two discussed studies that included case managers' use of the TTM.<sup>19,52</sup>

An article by Enguidanos<sup>49</sup> reiterated the lack of research and suggested that integrating behavior change theories, such as the TTM, into geriatric case management practice would be beneficial to the field. Enguidanos argued that the incorporation of the TTM and the Theory of Planned Behavior would provide structure and help delineate case management interventions.<sup>49</sup>

Case managers' use of the TTM was discussed by Mason et al<sup>19</sup> to help treat childhood obesity in a primary care setting. According to the authors, the TTM approach provides the opportunity to assess at what stage the child and parents are at for recognizing and preparation for changing their behaviors.<sup>19</sup> The utilization of a case manager permits individualized interventions for the child and the parents as well as their environment. Case managers can customize treatment for each family based on which stage each family member is at and what resources they have available to them. Intervention can also be tailored separately for the parents and child depending what stage they are at.

In another study, the TTM was incorporated by case managers in an HIV risk behavior reduction project in Wisconsin between 2000 and 2003.<sup>52</sup> HIV-infected persons who continued to engage in risk transmission behaviors were offered preventive case management which incorporated individual risk reduction counseling with case management to reduce risk factors that could spread the virus. The study found risk transmission behaviors were reduced from 41% at baseline to 29% at follow up. Participants also showed progression in TTM's Stages of Change model in seven separate areas that contribute to HIV risk transmission behavior.

The lack of literature on multiple aspects of this project, including a case manager's role in food pantries or their use of the TTM, reiterates the importance of conducting this study to observe the effect of a food pantry case manager's use of a TTM assessment and MI on clients attending the pantry.

## **HYPOTHESES**

The hypotheses for this study are that:

- a. The use of the TTM stages of change assessment and motivational interviewing will be associated with improvements in Freshplace participants' behaviors.
- b. The level of readiness to change will increase the longer participants attend Freshplace.

## **METHODOLOGY**

This study is based on secondary analyses of data previously collected as part of the Freshplace program. The university's Institutional Review Board (IRB) approved review of programmatic data to help facilitate the evaluation of the program.

To be eligible for Freshplace, members need to be 18 years of age or older, a resident of one of three zip codes in the North End of Hartford, Connecticut and previous utilizers of traditional food pantries. Each month Freshplace members meet with a Project Manager to discuss their goals for becoming self-sufficient, to identify potential barriers to reaching their goals, and to set targets for the following month. The Project Manager rates the members on their stage of change and readiness for change in 12 core areas. The areas are: food, entitlements/benefits, other assistance (i.e., utilities), education, employment, health care, health and nutrition, mental health and substance abuse, housing, child care, transportation, and daily living skills. The assessment uses the stages of change model to assist the Project Manager in determining what stage or level an individual is at to determine his/her need for services in each area. This study specifically analyzed response of this TTM-based assessment.

As part of this thesis, additional data were collected through two in-depth interviews with Freshplace's Project Manager. The interviews discussed the effectiveness of the program and included questions about the use of the TTM stages of change assessment form and motivational interviewing. The Project Manager was asked about the use of the TTM stages of change form, including its origin, strengths, weaknesses and overall effectiveness. The interviews probed for the Project Manager's opinion of MI's effectiveness in aiding members in their readiness to change. Questions were also asked



concerning the Project Manager's role in Freshplace as well as the possibility of replicating the program in other food pantries. The interviews were conducted in October, 2012 in person and in March, 2013 over the telephone.

As part of this thesis project, a brief manual describing the Project Manager's use of the TTM and MI was created. This manual was written in layman's language and was designed to be used as a tool so other food pantries could incorporate the practices at Freshplace into their own work. The manual is included in Appendix C.

Analyses were conducted using SPSS version 21. Descriptive statistics, including mean and standard deviation, were used to describe overall visits as well as identify which topics ranked as highest priorities for members after initiation of the stages of change based assessment. Frequencies were run to determine mean scores for each topic area at the initial visit for those members that identified the area as a need for service. Frequencies were also used to calculate stages of change and readiness scores at the initial visit, at the second session with the Project Manager, at the third visit for those members who had up to three visits, and at the fifth for members who attended five or more sessions with the Project Manager. Contingency tables and  $\chi^2$  tests were used to assess the difference between goals set and number of sessions that a member had attended with the Project Manager. Paired t-tests were used to measure change over time from the first session to the second and for members who attended up to three sessions or five or more sessions. The statistical significance level was set at  $p < 0.05$ .

## RESULTS

This project analyzed the changes in members' status based on Freshplace's TTM stages of change assessment form. The form was not initially used when Freshplace opened its doors in July 2010; it was created to increase the Program Manager's efficiency in working with members as well as to aid in capturing quantifiable data about members' needs and progress. It began being administered in January 2012. Thus, this project is based on data from 135 members who were scored on the assessment from January 2012 to January 2013.

### a. Total Visits

Each member had the opportunity to meet with the Project Manager once a month. The database used in this project recorded the scores from the first ten sessions. The average number of sessions attended by the 135 individuals during the study period was 4.38. For the purposes of this thesis, three divisions were made after the baseline to aid in measuring the changes of the readiness scores over time. The first group analyzed were members who attended the second session, which took place approximately one month after the first session (n=117). The second included only those members who attended up to three sessions with the Project Manager (n=59). This division was chosen because close to half (43.7%) of members analyzed attended up to three sessions. The final analytical group included members who attended five or more sessions. Table 4 below displays the number and percentages of members in each group.

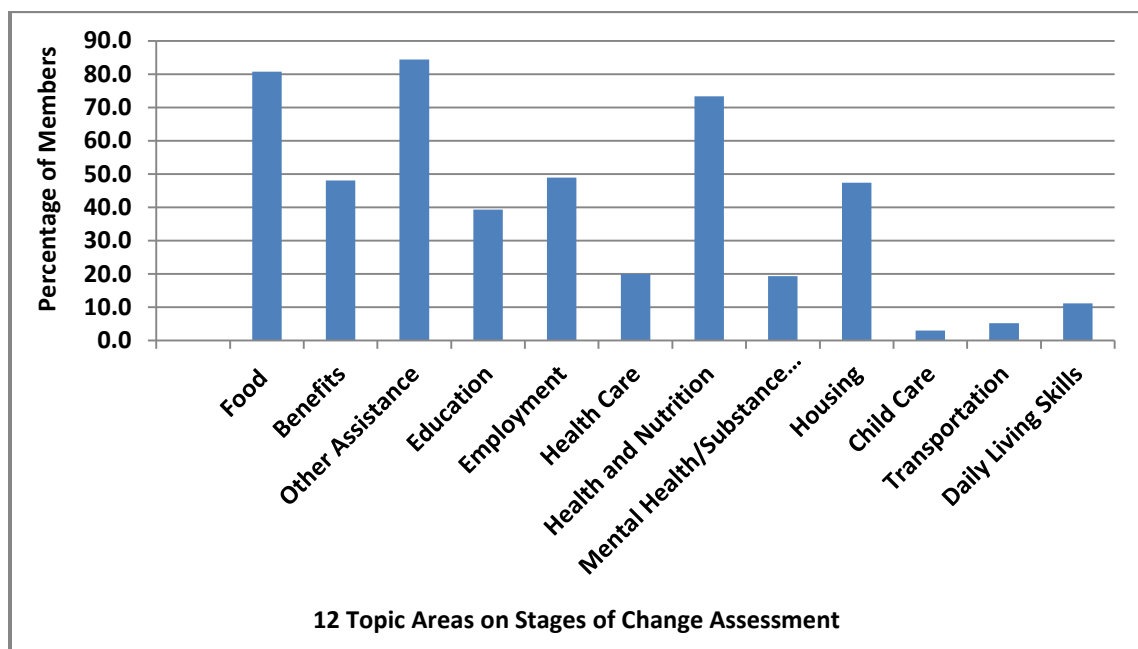
**Table 4. Total Number of Visits to Project Manager**

<b>Number of Visits Attended</b>	<b>Number of Members</b>
<b>2nd Visit</b>	117 (87%)
<b>Up to 3 Visits</b>	59 (44%)
<b>5 or More Visits</b>	57 (42%)

## b. Core Topic Areas

After assessing the stages of change, the Project Manager used it at each member's monthly meeting to discuss goals and progress in the 12 core areas. The Project Manager and member would discuss each of the topics and then decide which they wanted to work on. Figure 2 displays a bar graph showing the frequency that different areas were considered important to each member when the form was first administered. Members were not restricted to a specific number of topics and could discuss as many areas as they wanted.

**Figure 2. Percent of Members Selecting Each Topic Area for Improvement at the Initial Session**



As can be seen in Figure 2, Other Assistance (i.e., utilities) (84.4%), Food (80.7%), and Health and Nutrition (73.3%) were the areas chosen the most frequently for change. In descending order of selection, Employment (48.9%), Benefits (48.1%) and Housing (47.4%) were endorsed by almost half the members. Obtaining assistance or making

changes with Daily Living Skills (11.1%), Transportation (5.2%) and Child Care (3.0%) were the least likely to be chosen as goals to work on.

### c. Baseline Areas of Need

Statistical analyses were conducted to determine the average initial score among members that endorsed each topic domain as an area for need. Scores indicate the individual's readiness to change ranging from '1' (not ready to change) to '5' (the behavior change is actively being maintained). Observing the average score at baseline for those in need of each specific category provides the opportunity to see where members feel they are starting at in terms of readiness to change.

**Figure 3. Average Initial Score among Members Who Identified a Need for Service**

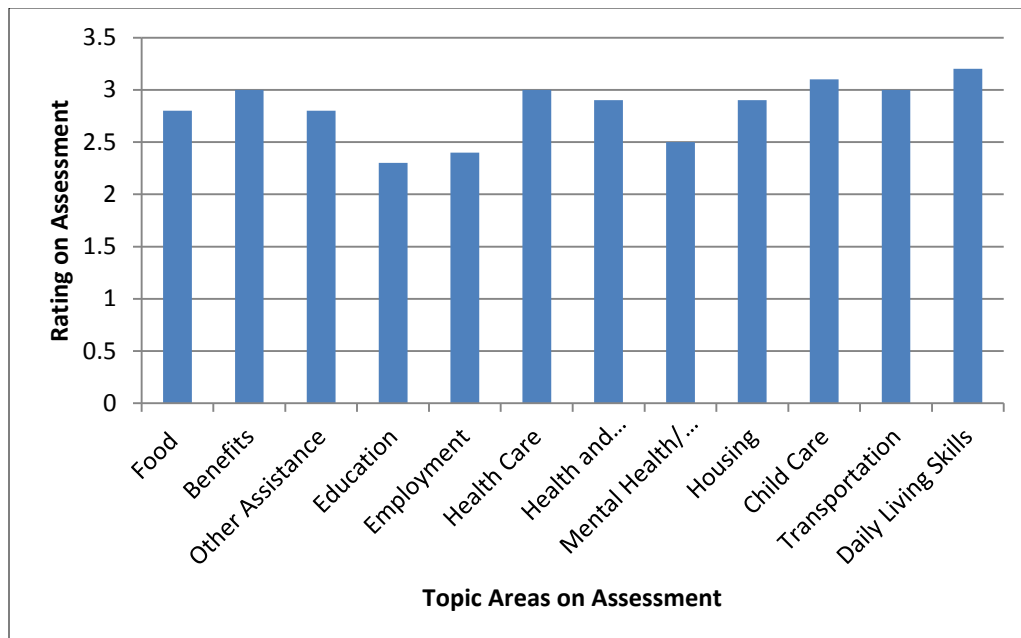


Figure 3 shows that the average ratings, for those who indicated a need for service at the initial visit, for all 12 categories ranged between a '2' (contemplation) and a '3' (preparation). This information provides Freshplace with the knowledge that even at the

initial visit with the form that many members are considering change or potential even making initial efforts to change.

Mental Health/Substance Abuse (mean = 2.5 (SD .96)), Employment (mean = 2.4 (SD .99)), and Education (mean = 2.3 (SD .85)), resulted in the lowest average levels of readiness to change among members who identified a need for service in those categories at the initial visit. Daily Living Skills (mean = 3.2 (SD .70)), Transportation (mean = 3 (SD .77)), and Child Care (mean = 3.1 (SD .89)), ranked as the categories in which members who indicated a need for service were reporting the highest readiness to begin changing.

#### **d. Areas of Need and Program Retention**

Chi-square tests were run to measure whether there was a difference between the members' stage of readiness at the baseline session and the subsequent sessions the member attended. The analysis of members who attended up to three session indicated that only people who selected Mental Health/Substance Abuse ( $\chi^2$ ,  $p = .02$ ) and Daily Living Skills ( $\chi^2$ ,  $p = .05$ ) showed a significant difference. Similar results were obtained when comparing members who attended five or more sessions. Mental Health/Substance Abuse ( $\chi^2$ ,  $p < .001$ ) and Daily Living ( $\chi^2$ ,  $p = .04$ ) were the only two categories determined to have significant differences. It is important to note that overall both categories were chosen at the baseline interviews less frequently than many of the other topics, with Mental Health/Substance Abuse being selected by 19% of members and Daily Living by 11%.

#### e. Change in Readiness over Time

To determine if members who remained in the program changed in their level of readiness over time, paired t-tests were calculated to compare the same person at two time points. Differences were looked at between the first and second visit, for those members who attended up to three sessions and for members who met with Project Manager five or more times. Tables 5-7 show the results of the paired t-tests.

**Table 5. Change in Level of Readiness between the First Visit and Second Visit**

<b>Goal</b>	<b>Avg. Score at 1st Visit  Mean (SD)</b>	<b>Avg. Score at 2nd Visit  Mean (SD)</b>	<b>Avg. Change in Score 1st Visit to 2nd Visit  Mean (SD)</b>	<b>P Value</b>
<b>Food</b>	2.81 (.67)	3.04 (.73)	0.23 (.53)	0.00
<b>Benefits</b>	3.85 (1.2)	3.98 (1.1)	0.14 (.64)	0.03
<b>Other Assistance</b>	2.98 (.87)	3.14 (.93)	0.16 (.86)	0.06
<b>Education</b>	2.35 (1.0)	2.57 (1.1)	0.22 (.64)	0.02
<b>Employment</b>	2.68 (1.2)	3.04 (1.3)	0.36 (.78)	0.00
<b>Health Care</b>	4.25 (1.1)	4.25 (1.1)	(-)0.01 (0.59)	0.87
<b>Health and Nutrition</b>	2.93 (.77)	3.14 (.88)	0.21 (.65)	0.00
<b>Mental Health/ Substance Abuse</b>	2.83 (1.1)	3.03 (1.2)	0.20 (.76)	0.16
<b>Housing</b>	3.63 (1.3)	3.69 (1.3)	0.06 (.50)	0.19
<b>Child Care</b>	3.84 (1.2)	3.89 (1.2)	0.05 (.23)	0.33
<b>Transportation</b>	3.26 (.95)	3.28 (.96)	0.02 (.53)	0.72
<b>Daily Living Skills</b>	3.21 (.79)	3.38 (.81)	0.17 (.47)	0.00

The change in mean score is listed in Table 5 for all the members who returned one month after their first session to meet with the Project Manager. By the second visit, significant differences were found for the goals of Food ( $p < .001$ ), Benefits ( $p = .03$ ), Education ( $p = .02$ ), Employment ( $p < .001$ ), Health and Nutrition ( $p < .001$ ) and Daily Living Skills ( $p < .001$ ). Other Assistance was nearing significance ( $p = .059$ ). As can be

seen in Figure 2, all of these categories, with the exception of Daily Living Skills, were chosen by a large percentage of the members as a goal to work on.

**Table 6. Change in Level of Readiness between the First Visit and Third Visit**

<b>Goal</b>	<b>Avg. Score at 1st Visit  Mean (SD)</b>	<b>Avg. Score at 3rd Visit  Mean (SD)</b>	<b>Avg. Change in Score From baseline to visit 3  Mean (SD)</b>	<b>P Value</b>
<b>Food</b>	2.75 (.66)	3.16 (.73)	0.41 (.71)	0.000
<b>Benefits</b>	3.79 (1.2)	4.14 (1.0)	0.35 (.86)	0.001
<b>Other Assistance</b>	2.89 (.85)	3.28 (.96)	0.39 (1.0)	0.002
<b>Education</b>	2.38 (1.1)	2.73 (1.3)	0.35 (.92)	0.026
<b>Employment</b>	2.63 (1.2)	2.94 (1.3)	0.31 (.81)	0.008
<b>Health Care</b>	4.19 (.87)	4.32 (.97)	0.12 (.60)	0.083
<b>Health and Nutrition</b>	2.82 (.77)	3.19 (.87)	0.37 (.69)	0.000
<b>Mental Health/ Substance Abuse</b>	2.74 (.98)	3.04 (1.2)	0.30 (.67)	0.030
<b>Housing</b>	3.61 (1.3)	3.67 (1.3)	0.07 (.68)	0.402
<b>Child Care</b>	3.80 (1.1)	3.93 (1.1)	0.13 (.52)	0.334
<b>Transportation</b>	3.21 (.98)	3.21 (.98)	0 (.68)	1.000
<b>Daily Living Skills</b>	3.10 (.81)	3.30 (.82)	0.2 (.60)	0.007

Table 6 displays the average difference in scores that occurred between the first and the third session for members who attended up to three sessions. A statistically significant difference in the average change score for members at the third session was detected for eight of the 12 areas.

**Table 7. Change in Level of Readiness between the First Visit and Fifth Visit**

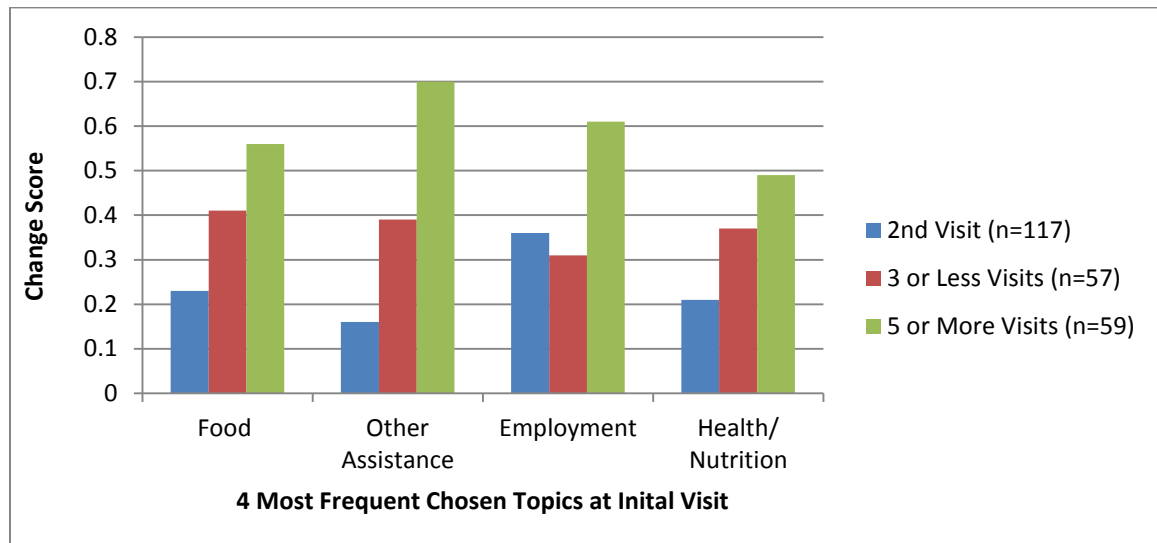
<b>Goal</b>	<b>Avg. Score at 1st Visit  Mean (SD)</b>	<b>Avg. Score at 5th Visit  Mean (SD)</b>	<b>Avg. Change in Score From baseline to visit 5  Mean (SD)</b>	<b>P Value</b>
<b>Food</b>	2.79 (.65)	3.35 (.72)	0.56 (.71)	0.00
<b>Benefits</b>	3.73 (1.2)	4.13 (1.0)	0.40 (.91)	0.00
<b>Other Assistance</b>	2.92 (.88)	3.62 (1.1)	0.7 (1.1)	0.00
<b>Education</b>	2.65 (1.2)	3.17 (1.3)	0.52 (.95)	0.01
<b>Employment</b>	2.76 (1.2)	3.37 (1.3)	0.61 (1.1)	0.00
<b>Health Care</b>	4.09 (1.2)	4.16 (1.2)	0.07 (.83)	0.52
<b>Health and Nutrition</b>	2.85 (.66)	3.34 (.85)	0.49 (.91)	0.00
<b>Mental Health/ Substance Abuse</b>	2.60 (.88)	3.20 (1.2)	0.6 (.94)	0.01
<b>Housing</b>	3.47 (1.3)	3.81 (1.2)	0.33 (.85)	0.00
<b>Child Care</b>	3.33 (1.4)	3.50 (.84)	0.17 (.75)	0.61
<b>Transportation</b>	3.13 (1.1)	3.34 (.76)	0.21 (.86)	0.09
<b>Daily Living Skills</b>	3.04 (.86)	3.29 (.75)	0.25 (.68)	0.01

Table 7 shows the average difference between the first visit and the fifth visit for members who attended at least five sessions. There were statistically significant differences for the average change score for members who attended five or more sessions for nine of the 12 areas. Areas that ranked high at the initial session (i.e., Food, Other Assistance, and Health and Nutrition) showed improvement for members who attended up to three sessions as well as for those who attended more than five sessions.

Comparisons were made of the average change scores that were calculated between baseline and the three different follow-up times. Figure 4 shows the results of the four topic areas endorsed by the most members at the initial visit as areas in need of services: Food, Other Assistance, Employment and Health/Nutrition.



**Figure 4. Comparison of Average Change Scores Over Time in the Areas of Food, Other Assistance, Employment and Health and Nutrition**



As can be seen by Figure 4, the difference in average change score for all four categories increased the longer an individual stayed in the Freshplace program and met with the Project Manager. Utilizing paired t-tests, the goals of Food, Employment and Health/Nutrition showed significant difference at every time point. Other Assistance was nearing significant difference after one month of working on the goal ( $P = .059$ ) and resulted in significant difference for members who attended up to three and for those attending at least five sessions.

Regardless of being statistical significance, an increase in the average change score took place for the majority of the 12 topic areas. Transportation was the only category that differed where the average change score decreased from the second visit (mean = .02 (SD .53)) compared to the result for members who attended three sessions (mean = 0 (SD .68)). However, the change score increased again for Transportation from the baseline to fifth visit for members who attended at least five sessions.

## **DISCUSSION**

This thesis helps evaluate an innovative food pantry program that integrates the TTM and MI as a method to help improve people's lives in a variety of domains beyond food and nutrition. Currently there is a lack of research dealing with nearly every aspect this project is investigating including: food pantry interventions, case management in food pantries and case manager's use of the TTM. The University of Connecticut involvement in this community collaboration has provided a great opportunity to observe a number of outcomes of the program and help measure its effectiveness as well as aid in its replication.

### **a. Positive Effect Observed from the Data**

Results of the analysis of the ratings on the TTM stages of change assessment appear to show a positive effect on Freshplace members. Significant differences in the average change scores for a majority of the core topics were consistent at the first session after the initiation of the form, as well as for members that attended three or less sessions and for individuals that attended five or more sessions. When a paired t-test was run to compare the average mean from the initial assessment to the second assessment one month later, scores increased for all areas except Health Care. Statistically significant differences in the scores were found for six of the 12 topics. The same pattern of improvements was found at the three month and five month visits.

Individuals who attended three sessions or less had increased scores in eight of the 12 areas. There was continued increase in the average change scores observed for members who attended five or more sessions. For those long term attenders, all 12 topics had a higher mean value at visit five compared to their first session.

There was a clear increase in the progress made for areas that a majority of members identified as an area for personal change. It appears that use of the TTM stages of change form and motivational interviewing appears to have a positive effect on helping clients to make behavior changes that lead to self-sufficiency.

#### **b. Goal Selection at the Initial Visit**

The TTM stages of change form was important in determining which goals members at Freshplace felt were the most necessary to change. Other Assistance, which includes utilities, energy assistance, renter's rebate and Safelink phones, was the goal area most often chosen by members at the initial session, selected by 84.4% of members. Freshplace's Project Manager was not surprised by this because a common function of case/Project Managers is to help find services at minimal to no cost. Members clearly expressed their need for aid in utilities by the high percentage (84.4%) of individuals who chose this goal. Fortunately the increase of the average change in score suggests that the Project Manager has been effective in progressing members to or at least toward the next stage.

The fact that the goal areas of Food and Health/Nutrition ranked as the second (80.7%) and third (73.3%) most popular topics is not surprising considering that the assessment was completed at a food pantry by individuals with low food security. Increasing food security as well as gaining health and nutrition knowledge makes sense for this population.

Goal areas that were infrequently selected Daily Living Skills (11.1%), Transportation (5.2%) and Child Care (3.0%). The lack of interest in these areas might signify that these problems may not be as relevant for the population that attends the

Freshplace. However, these goals may be more important with a different population. Pilot-testing will be important for replication by other programs or with other population.

Transportation ranked as the second lowest topic area chosen by only 5.2% of members at their initial assessment that used the TTM stages of change based form. It was the only topic of the 12 that did not result in a consistent increase over the three divisions chosen for this paper. However, its average score for baseline, three sessions and five sessions remained around a 3.25. It is also important to acknowledge that a rating of a three on the assessment form (Appendix A) represents individuals who use public transportation without problems. For some members at Freshplace, efficient use of public transportation or walking may suffice their needs, resulting in them not feeling the need to work on the action '4' and maintenance '5' stages in which individuals are encouraged to obtain and legally operate an automobile. If the majority of Freshplace members are satisfied with transportation they currently have and are consistently scoring at a '3', then the area of transportation may not be necessary to include in this assessment in the future. When questioned about the low number of members who selected transportation as a goal area, the Project Manager stated that most members have a car, walk or use the bus with no problems. He believes that transportation is a topic area that could be removed from the assessment (personal communication, March 13, 2013).

Child Care was selected by only 3% of members. Although the average change score increased at the three divisions established in this thesis (.05 at second session, .13 for three or less visits and .17 for five or more visits), no significant differences were seen. Freshplace's Project Manager explained that most participants do not have very

young children and if they do, they have extended family watch them (personal communication, March 13, 2013).

**c. Clinically Meaningful?**

The majority of average change scores calculated at each of the three divisions resulted in statistically significant differences. However, an important point to discuss is that although the data show statistical significance, it is important to question if it is clinically meaningful? For example, the average change score for members with five or more visits in the goal area of Food was .56 (SD .71). The change was statistically significant, however is it clinically meaningful to only move half of a stage? Depending on where the movement within the stages of change takes place could have a lot more impact. A member who transitions from contemplation to the beginning of preparation may have a more clinically meaningful change than a member who moves half of a level within the contemplation stage.

The stages of change model is comprised of components: behavioral intention and behavior change. Behavioral intention involves pre-contemplation, contemplation, and part of preparation. The rest of preparation, action and maintenance represent the actual behavior change portion of the model<sup>21</sup>. Preparation fits into both categories because it is within the preparation stage that individuals are beginning to plan how they will change their behavior and often they started to make a change. An individual who progresses to the preparation stage or moves within the stage may be making more clinically meaningful progress than movement within another stage because at this point the individual is transitioning from behavioral intention to behavioral change.

The average score on the TTM stages of change assessment provides an example of how a change score can appear different at different levels. Under the goal of Food, the mean score progressed from 2.8 (SD .7) at baseline to 3.3 (SD .8) at the third visit and 3.4 (SD 3.4) at the fifth visit. The average change score between the first and fifth visit (.6) represented movement from one stage to another stage: contemplation to preparation. For the goal of Other Assistance, there was the same .6 change between the baseline mean score of 3.0 (SD 1.0) to the mean score of the fifth visit (3.6 (SD 1.1). However, in this case the change remained within the same stage, preparation. Thus, knowing where on the scale the change took place may have more meaning than how big the change was.

It is important to consider that behavioral change takes time and that it may simply take more time for the average member to progress to the next stage. A future step in evaluating the TTM stages of change assessment form could be a qualitative review of the Project Manager's case notes that he writes on the form. Comparing the notes from the various visits may help in determining whether a clinically meaningful change took place. It is also important to remember that Freshplace is a new program that has experienced a variety of modifications to become more effective, which in turn could affect the types of change witnessed.

#### **d. Reality of a New Community Based Project**

Part of the reality of a new community based project is that change is going to be necessary throughout the process. Altering, editing, eliminating and adding of various materials, guidelines and supplies are necessary to establish an effective and resourceful program. It is essential that all parties be flexible, compromise and be open to modification when necessary. The creation of the TTM stages of change assessment form

is an example of a tool added to help increase the Project Manager's efficiency and effectiveness in encouraging self-sufficiency for Freshplace members. Volunteers and students from the University of Connecticut School of Social Work help with many aspects of Freshplace, however, the Project Manager is the one who meets with all members of Freshplace on a monthly basis. He noted that the TTM stages of change form proved beneficial with such a large caseload because prior to the form he used to write detailed case notes for each individual (personal communication, March 13, 2013). The assessment form provided a forum to summarize information.

The new form also provided a quantifiable way for data to be collected and analyzed to help measure the efficacy of the program. The frequency which goals were selected allows the Project Manager to determine which topics are the most relevant for the Freshplace population. Results of members' change scores enable him to see if progress has been made toward behavior change. This knowledge helps the Project Manager cater the program to fit the needs of members.

#### **e. Edits to the TTM Stages of Change Assessment Form**

This thesis provided an opportunity to evaluate the utility of the TTM stages of change form after its first year of use. In addition, the author of this thesis utilized his experience in coordinating and conducting contingency management research studies to evaluate and edit the assessment form. Appendix B is the result of the edits.

The first edit involved the terminology in the heading section that described each of the stages. The number (1) on the scale was listed as "problem, not ready" and (2) as "pre-contemplation, contemplation". It is inappropriate for pre-contemplation and contemplation to be listed as the same stage because they are not the same thing. Pre-

contemplation is equivalent to “problem, not ready” and therefore already existed and could be removed for number (2). It is more important for the terminology to make sense to them than it is to use the exact wording of the stages of change model. For example, “building capacity” is an acceptable replacement for “preparation.”

The majority of the original wording within the assessment was left alone to keep consistency and familiarity for the Project Manager. Words or phrases were added to the explanations of the scale to better fit the concepts of the stages of change model. The phrasing of the contemplation stage had more edits than any other stage. An individual in the contemplation stage is becoming interested in making a change or at least finding out more information, however, they have not yet done anything toward changing.<sup>32</sup>

The goal of Food was the only topic in which stages were combined. Edits were made to separate the choices of (2-3) to their own separate descriptions (i.e., 2 = 1-2 visits to pantries a month, finding info about SNAP or starting to apply for SNAP and 3 = Goes to 1-2 pantries a month, has SNAP benefits but runs out of them before the end of the month). This combination of numbers on the scale is a good example in how the Project Manager’s case notes helped determine the level of meaningful change that occurred.

A concern that was noted in the side comments is the combination of multiple topics into one goal. For instance, Health and Nutrition are two separate categories that were combined together. If a member scored a two it would be hard to determine if it was because they “signed up for a cooking group” or because they “scheduled a doctor’s appointment,” or if they completed both tasks. Although it is understandable to want to keep the categories to a manageable number, combining topic areas made it unclear what



the member was responding to. Daily Living Skills is another goal area in which the definition of the scale involves multiple topics. The Project Manager explained that the category Daily Living Skills was created to incorporate an overall score of how a member is dealing with day to day life (personal communication, October 5, 2013). He explained that the rating of Daily Living Skills is more subjective and that a member that is overall doing well is rated higher than a member who is not as stable (personal communication, March 13, 2013).

#### **f. Creation of a Training Manual**

As part of this thesis project, a brief manual describing the Project Manager's use of the TTM and MI was created (Appendix C). This manual was written in layman's language and was designed to be used as a tool so other food pantries could incorporate the practices at Freshplace into their work. The manual outlines an overview of Freshplace, the TTM and MI. In addition, it discusses the origin and use of the TTM stages of change assessment form used at Freshplace.

#### **g. Stage of Change Model vs. TTM vs. MI**

The stages of change model is only one portion of the TTM, which also includes the ten processes of change, decisional balance and self-efficacy. A literature review of the TTM warns that one of the major problems of TTM applications is the oversimplification of the model, especially when only the stages of change component is utilized.<sup>23,24</sup> It appears that the Project Manager is using some of the components, but not on a consistent basis. When the Project Manager was asked if he was utilizing the importance-confidence rulers associated with self-efficacy or a cost and benefits grid that measures decisional balance, he replied no.

Part of the nature of community projects is that the ideal models, theories and concepts are not always feasible in situations where multiple partners are compromising to obtain the same end result. The Project Manager may not have had prior experience with the TTM model, however, was willing to incorporate the stages of change portion into an assessment that allowed him to be more efficient with his monthly one-on-one session as well as provide quantifiable data. His knowledge and utilization of MI was a practical and necessary technique to increase member's readiness to make a behavior change and advance to the next stage.

He believes the use of motivational interviewing improves the quality and quantity of the results (personal communication, October 5, 2012) and that the self-reflective nature of MI increases participants' self-focus which in turn contributes to making a change (personal communication, March 13, 2013). The Project Manager's use of MI may be part of the reason why there was an increase in readiness to change for members who attend Freshplace.

## **IMPLICATIONS**

The evaluation of Freshplace and its various components has implications for agencies, organizations, policy makers and individuals who are trying to provide a fundamental approach to the problem of hunger by addressing some of the root causes of poverty, including food security, stable housing and employment. Freshplace is utilizing new techniques and assessments to reduce poverty and increase self-sufficiency. This evaluation of the program contributes to determining to what extent replication is feasible and possible.

Case managers working in social services is nothing new, however, including case managers in a client-choice food pantry is an innovative concept that is just now being evaluated. Furthermore, having case managers use of the TTM stages of change model and motivational interviewing is a pioneering concept. Data analyzed for this project indicate that the use of the TTM stages of change assessment and use of MI had a positive effect on members of the program. Continued evaluations of the data are necessary to observe what types of behavioral changes take place and how long the changes last.

Replication of the Freshplace model will require the hiring of case managers at food pantries, as well as the need for training in the TTM and MI. A possible solution could be having food banks serve as coordinating and training locations for food pantry case managers.<sup>55</sup> Centralizing training through regional food banks may be the most efficient way to provide trainings and oversight. Acquiring the skills and knowledge to effectively administer the TTM and MI takes time and guidance, as well as the financial burden of trainings and materials.

The findings from Freshplace should be disseminated to educate others on the efforts and accomplishments of the program. The success of Freshplace could also inspire additional community collaborations. Evaluations need to continue to take place. The University partnership provides an opportunity for faculty and graduate students to analyze various aspects of the program to determine how effective each component is. This information can be used as a resource for the community partners as well as public health educators and policy makers.

## **LIMITATIONS**

As stated previously, essentially all aspects of what is being observed in this thesis is new and as a result there are limitations on what can be taken from it.

Considering that Freshplace is a multicomponent program, it is hard to say specifically what caused the observed changes in behavior. However, it is plausible that the Project Manager's use of the TTM stages of change form combined with MI may have influenced the change.

The Project Manager met with members each month to discuss their status in the 12 goal areas. According to the Project Manager, the members select their own status on each scale with the Project Manager occasionally questioning their choices. This information is self-reported data because the Project Manager cannot verify everything and has to accept what the member says. The relationship each individual has with the Project Manager may affect what they report to him and where they place themselves on each scale.

This study was based on secondary analysis of data. A major limitation to secondary analyses is not having the ability to choose what questions are asked, how they are asked or who they asked to. Secondary data also limits the information available to be included in the analysis. This project measured whether the use of the TTM assessment was effective in measuring change over time. Statistical differences were found in majority of the tests measuring the average change score, however it needs to be determined if the changes were clinically meaningful.

Data analyzed in this thesis were not always client baseline data because the TTM stages of change assessment was not instituted until a year and half after the

implementation of the program. The assessment was administered to all participants regardless of when they started the program. Ideally, the form would have been introduced at the beginning of the program or only to new members, thus creating true baseline data.

There was no way to determine how long each member had actually been involved in the program before the assessment began. As a consequence of this, there was no way to determine how accurate the total visits numbers for this thesis were. A member may appear to have had assessment data for four sessions, however, they may have attended several sessions prior to the implementation of the new form. A member who had been participating for a few months before the initiation of the TTM stages of change form may have already been benefiting from the program and therefore their ratings on the form may be higher than when they started Freshplace.

Chi-square tests were run to compare the difference between goals set and the number of sessions with the Project Manager that a member attended. Demographic information was not included in the dataset and therefore it was not possible to examine gender or age differences in goal selection. Future research should try to link the demographic information with the dataset to observe any differences between genders or various age groups and goal selection.

Freshplace's Project Manager is an integral part in the success of the program. As with many employees of non-profit social service agencies he is very busy and often responsible for a multitude of things. In addition, being a part of community collaboration requires flexibility and creativity from all members. The assessment was created to help the Project Manager more efficiently with a large case load of members at

Freshplace as well as created quantifiable data for evaluation. As with many community programs, the theory does not always fit reality and only selected aspects of the model are used.

The originality of Freshplace and the Project Manager's use of the TTM stages of change assessment limit how generalizable the results are beyond food pantry utilizers in Hartford, Connecticut. Although the results are not necessarily generalizable to other settings or communities, the general circumstance of individuals who utilize food pantries are similar and therefore the idea and concepts of Freshplace as well as some of the material may be beneficial to others.

## CONCLUSIONS

Traditional food pantries were established as emergency food programs to meet an immediate need. However, as opposed to temporary facilities they have become permanent institutions that keep growing in numbers.<sup>11</sup> To combat the issues of food insecurity and poverty in the North End of Hartford, Connecticut, a community partnership of Foodshare, Chrysalis Center, Inc., Junior League of Hartford, Inc. and the University of Connecticut joined together to create a client-choice food pantry with case management services called Freshplace.

Initial reviews of the Freshplace program have been positive, with significant differences for changes in food security and fruit and vegetable consumption compared to a comparison group.<sup>11</sup> The hypotheses for this thesis were confirmed. The use of a TTM stages of change assessment and MI model was associated with improvements in Freshplace participants' behaviors and the level of readiness to change increased the longer participants attended Freshplace.

Case management services within food pantries may be an effective solution to addressing a number of behavioral issues. Furthermore, the use of the TTM stages of change model and MI may have influenced the behavior change that occurred in Freshplace members. In addition to being able to determine each member's readiness to change through the TTM stages of change based form, the Project Manager can match needs with services by capitalizing on the array of resources available on site to increase the likelihood of an individual progressing to the next stage.

The success of Freshplace can be attributed to the support and investment of each of its community partners. Freshplace is part of Chrysalis Center facilities in the North-



End of Hartford. The Project Manager is also an employee of Chrysalis. Foodshare provides a large percentage of the food that the members are able to select from and the Junior League of Greater Hartford provides volunteers who are an integral part of the community program. The Project Manager stated that volunteers from the Junior League are essential to the program (personal communication, October 5, 2012). They help in picking up, delivering and stocking the client-choice pantry. In addition to covering the front desk, they assist members with shopping at the pantry, internet searches for jobs, housing, etc. and resume writing. Established and committed volunteers would be an essential requirement to replicating Freshplace. While most food pantries rely on volunteers, they do not often have the committed support of multiple community partners.

In addition to community partnership, space, materials and funding are inevitable prerequisite that need to exist. Finding funding through state, federal or private sources are necessary requirements to establish programs that tackle the root of the problem and strive to increase self-sufficiency within the community.

A brief manual describing Freshplace, the TTM and MI was created to help aid in the replication of Freshplace. In addition to providing an overview of the goal areas, the manual provides an example of the TTM stages of change assessment form and general points on how to use it. Ideally the manual will be used as a guide for other food pantries working on increasing self-sufficiency with their members. Freshplace is an inspirational program that will ideally have lasting effects on the local community and beyond.

## APPENDIX A

### Original Freshplace Member Assessment

<b>Name:</b> <b>Date:</b>
<ul style="list-style-type: none"> <li>Complete this form for all participants at: 1) entry, 2) monthly assessments, and 3) at exit.</li> <li>Level categories: 1) problem, not ready; 2) pre-contemplation, contemplation; 3) building capacity; 4) in progress; 5) received/ achieved; or N/A if non-applicable</li> </ul>
<p><b>Food.</b> Member can meet basic food needs but requires occasional assistance; can meet basic food needs without assistance; or can choose to purchase any food desired.</p> <p><b>1 = 2 or more visits to a food pantry a month, No SNAP benefits, Worry about food more than just @ the end of the month.</b></p> <p><b>2-3 = Goes to 1-2 pantries a month, runs out of SNAP benefits before the end of the month.</b></p> <p><b>4 = Beginning to have enough food throughout the month, preparing low cost meals.</b></p> <p><b>5 = Has access to enough food every month, prepares low cost meals, balanced food budget.</b></p> <div style="text-align: center; margin-top: 10px;"> <span>1</span>      <span>2</span>      <span>3</span>      <span>4</span>      <span>5</span>      <span>N/A</span> </div>
<p><b>Entitlements/ Benefits.</b> Member has obtained entitlements/ benefits (SNAP, TANF, WIC). Member has contact information for DSS worker and is able to process annual re-determination.</p> <p><b>1 = No Benefits</b></p> <p><b>2 = No Benefits R/T issues of immigration, etc.</b></p> <p><b>3 = Applied/Problems with re-instatement.</b></p> <p><b>4 = Applied in progress of waiting, re-determination in progress.</b></p> <p><b>5 = Benefits intact, can apply/re-apply independently.</b></p> <div style="text-align: center; margin-top: 10px;"> <span>1</span>      <span>2</span>      <span>3</span>      <span>4</span>      <span>5</span>      <span>N/A</span> </div>
<p><b>Other Assistance: (Utilities/ Energy Assistance; Renter's Rebate; Safelink Phone).</b> Member has applied; or has paperwork to apply for Assistance; or member maintains payments as arranged. Member has the information needed to apply annually.</p> <p><b>1 = Never applied for any above assistance.</b></p> <p><b>2 = Eligible for above assistance &amp; will apply.</b></p> <p><b>3 = Preparing needed paper work to apply.</b></p> <p><b>4 = Paper work prepared, applied or waiting on scheduled appointment.</b></p> <p><b>5 = Person can independently apply for annual benefits or has aquired benefit.</b></p> <div style="text-align: center; margin-top: 10px;"> <span>1</span>      <span>2</span>      <span>3</span>      <span>4</span>      <span>5</span>      <span>N/A</span> </div>
<p><b>Education.</b> Member has completed education/ training needed to become employable; has enrolled in an education/ training program; or has applied for grants.</p> <p><b>1 = Less than a High Schools education.</b></p>

<b>Name:</b>						
<b>Date:</b>						
<b>2 = Contemplating Adult Ed, GRE, Computer Class, College Program.</b> <b>3 = Scheduled/Enrolled in education course of choice.</b> <b>4 = Attending educational course.</b> <b>5 = Completed education / training needed to become employable.</b>						
1	2	3	4	5	N/A	
<b>Employment.</b> Member has attained meaningful employment; or has made positive progress towards attaining employment. If member is unable to work; he or she is applying for disability or receiving disability. <b>1 = Un-employed for over 1 yr.</b> <b>2 = Verbalized thoughts or has it as a goal.</b> <b>3 = Began resume / Cover letter</b> <b>4 = Has a resume / Cover letter, actively searching for employment.</b> <b>5 = Employed part/full time.</b>						
1	2	3	4	5	N/A	
<b>Health Care.</b> Member has applied for medical coverage, waiting on approval; or is covered by affordable, adequate health insurance and has a medical provider. <b>1 = No Health Care.</b> <b>2 = Wants health care.</b> <b>3 = Applying/Scheduled an appointment.</b> <b>4 = Waiting on processed paper work to be approved.</b> <b>5 = Has health care benefits.</b>						
1	2	3	4	5	N/A	
<b>Health and Nutrition.</b> Member is receiving preventative screenings; has attended cooking classes, assists with shopping for ingredients to prepare meals, has met with nutrition students and utilizes recipes. <b>1 = Person has not had a physical in over 2 years.</b> <b>2 = Person is contemplating cooking classes or making a recipe from Freshplace, thinking about going to the doctor</b> <b>3 = Person has signed up for a cooking group, met w/Uconn students, scheduled appointment with doctor</b> <b>4 = Attending a cooking group, reports making healthy meals, trying Freshplace recipes, receiving preventive care</b> <b>5 = Completed classes, making meals with nutritious foods, receiving preventive screenings (high blood pressure, diabetes)</b>						
1	2	3	4	5	N/A	
<b>Mental Health/ Substance Abuse.</b> Member has a mental health/ substance abuse provider, has completed their intake appointment, has regularly scheduled appointments and is taking						

<b>Name:</b>						
<b>Date:</b>						
<p>medication as prescribed; capable of managing stress.</p> <p><b>1 = Assessed as abusing substances or not in treatment for a known mental health disorder.</b></p> <p><b>2 = Verbalized possible treatment.</b></p> <p><b>3 = Has taken treatment provider contacts.</b></p> <p><b>4 = Person is attending provider scheduled appointments.</b></p> <p><b>5 = Freshplace staff assesses that member is invested in their continued treatment; assessed as not having M.H. issues.</b></p>						
1	2	3	4	5	N/A	
<p><b>Housing.</b> Household is safe, adequate, unsubsidized or subsidized housing; or member has completed paperwork for alternative housing and is on waiting list.</p> <p><b>1 = Homeless, living in a shelter/short term housing/Living with a friend/family home short term or couch.</b></p> <p><b>2 = Rooming house.</b></p> <p><b>3 = Working, saving \$/access to security deposit, applying to housing program/section 8.</b></p> <p><b>4 = Employed, meeting with landlords, \$ for security deposit.</b></p> <p><b>5 = Healthy &amp; Safe permanent housing.</b></p>						
1	2	3	4	5	N/A	
<p><b>Child Care.</b> Affordable subsidized childcare is available; or reliable, affordable childcare is available with no need for subsidy.</p> <p><b>1 = No child care &amp; has children under the age of 6.</b></p> <p><b>2 = Exploring child care options.</b></p> <p><b>3 = Accessing family, peer or day care part time.</b></p> <p><b>4 = Will have stable &amp; safe day care for children during the time needed to become more self-sufficient.</b></p> <p><b>5 = Stable, safe child care is available to enable member to work.</b></p>						
1	2	3	4	5	N/A	
<p><b>Transportation.</b> Transportation is generally accessible to meet basic travel needs; or transportation is readily available and affordable; driver is licensed, car is adequately insured.</p> <p><b>1 = No Car, often does not have money for bus fare.</b></p> <p><b>2 = Un-registered car, poor condition, no employment.</b></p> <p><b>3 = Uses public transportation without problems.</b></p> <p><b>4 = Owns a suitable car, works and the car is registered &amp;/or on the road most of the time.</b></p> <p><b>5 = Person has a safe running car, registered, insured &amp; working.</b></p>						
1	2	3	4	5	N/A	

<b>Name:</b>						
<b>Date:</b>						
<p><b>Daily Living Skills.</b> Member is able to provide beyond basic needs of daily living for self; or able to meet all basic needs of daily living without assistance. Member has people to rely on for social support.</p> <p><b>1 = Poor hygiene &amp; reported diet.</b></p> <p><b>2 = Wants to become more stable but life is chaotic.</b></p> <p><b>3 = Knows who to reach out to for social support, taking care of personal hygiene.</b></p> <p><b>4 = Able to make appointments on time, makes follow-up calls, reliable.</b></p> <p><b>5 = Able to meet all basic needs of daily living without assistance. Stable, has strong support system in place.</b></p>						
	1	2	3	4	5	N/A
<p><b>Other.</b></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>						
<b>TOTAL</b>						

## APPENDIX B

### Edited Freshplace Member Assessment

<b>Name:</b>	<b>Date:</b>
<ul style="list-style-type: none"> <li>Complete this form for all participants at: 1) entry, 2) monthly assessments, and 3) at exit.</li> <li>Level categories: 1) problem, not ready (pre-contemplation); 2) contemplation; 3) building capacity (preparation); 4) in progress (action); 5) received/ achieved; or N/A if non-applicable</li> </ul>	
<p><b>Food.</b> Member can meet basic food needs but requires occasional assistance; can meet basic food needs without assistance; or can choose to purchase any food desired.</p> <p><b>1= 2 or more visits to a food pantry a month, No SNAP benefits, Worry about food more than just @ the end of the month.</b></p> <p><b>2 = 1-2 visits to pantries a month, finding info about SNAP or starting to apply for SNAP</b></p> <p><b>3 = Goes to 1-2 pantries a month, has SNAP benefits but runs out of them before the end of the month.</b></p> <p><b>4 = Beginning to have enough food throughout the month, preparing low cost meals.</b></p> <p><b>5 = Has access to enough food every month, prepares low cost meals, balanced food budget.</b></p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>1</span> <span>2</span> <span>3</span> <span>4</span> <span>5</span> <span>N/A</span> </div>	
<p><b>Entitlements/ Benefits.</b> Member has obtained entitlements/ benefits (SNAP, TANF, WIC). Member has contact information for DSS worker and is able to process annual re-determination.</p> <p><b>1 = No Benefits</b></p> <p><b>2 = No Benefits but interested in applying for them R/T issues of immigration, etc.</b></p> <p><b>3 = Applied/Problems with re-instatement.</b></p> <p><b>4 = Applied in progress of waiting, re-determination in progress.</b></p> <p><b>5 = Benefits intact, can apply/re-apply independently.</b></p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>1</span> <span>2</span> <span>3</span> <span>4</span> <span>5</span> <span>N/A</span> </div>	
<p><b>Other Assistance: (Utilities/ Energy Assistance; Renter's Rebate; Safelink Phone).</b> Member has applied; or has paperwork to apply for Assistance; or member maintains payments as arranged. Member has the information needed to apply annually.</p> <p><b>1 = Never applied for any above assistance.</b></p> <p><b>2 = Eligible and interested for above assistance but has not applied for any yet.</b></p> <p><b>3 = Preparing needed paper work to apply.</b></p> <p><b>4 = Paper work prepared, applied or waiting on scheduled appointment.</b></p> <p><b>5 = Person can independently apply for annual benefits or has aquired benefit.</b></p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>1</span> <span>2</span> <span>3</span> <span>4</span> <span>5</span> <span>N/A</span> </div>	
<p><b>Education.</b> Member has completed education/ training needed to become employable; has enrolled in an education/ training program; or has applied for grants.</p>	

<b>1 = Less than a High Schools education.</b> <b>2 = Contemplating Adult Ed, GRE, Computer Class, College Program.</b> <b>3 = Scheduled/Enrolled in education course of choice.</b> <b>4 = Attending educational course.</b> <b>5 = Completed education / training needed to become employable.</b>						
	1	2	3	4	5	N/A
<b>Employment.</b> Member has attained meaningful employment; or has made positive progress towards attaining employment. If member is unable to work; he or she is applying for disability or receiving disability. <b>1 = Un-employed for over 1 yr.</b> <b>2 = Verbalized thoughts or has it as a goal.</b> <b>3 = Began resume / Cover letter</b> <b>4 = Has a resume / Cover letter, actively searching for employment.</b> <b>5 = Employed part/full time.</b>						
	1	2	3	4	5	N/A
<b>Health Care.</b> Member has applied for medical coverage, waiting on approval; or is covered by affordable, adequate health insurance and has a medical provider. <b>1 = No Health Care.</b> <b>2 = Wants health care.</b> <b>3 = Applying/Scheduled an appointment.</b> <b>4 = Waiting on processed paper work to be approved.</b> <b>5 = Has health care benefits.</b>						
	1	2	3	4	5	N/A
<b>Health and Nutrition.</b> Member is receiving preventative screenings; has attended cooking classes, assists with shopping for ingredients to prepare meals, has met with nutrition students and utilizes recipes. <b>1 = Person has not had a physical in over 2 years.</b> <b>2 = Person is contemplating cooking classes or making a recipe from Freshplace, thinking about going to the doctor</b> <b>3 = Person has signed up for a cooking group, met w/Uconn students, scheduled appointment with doctor</b> <b>4 = Attending a cooking group, reports making healthy meals, trying Freshplace recipes, receiving preventive care</b> <b>5 = Completed classes, making meals with nutritious foods, receiving preventive screenings (high blood pressure, diabetes)</b>						
	1	2	3	4	5	N/A
<b>Mental Health/ Substance Abuse.</b> Member has a mental health/ substance abuse provider, has completed their intake appointment, has regularly scheduled appointments and is taking						

medication as prescribed; capable of managing stress.						
1 = Assessed as abusing substances or not in treatment for a known mental health disorder.						
2 = Verbalized possible treatment.						
3 = Has taken treatment provider contacts and/or scheduled an appointment for an evaluation.						
4 = Person is attending provider scheduled appointments.						
5 = Freshplace staff assesses that member is invested in their continued treatment; assessed as not having M.H. issues.						
1	2	3	4	5	N/A	
<b>Housing.</b> Household is safe, adequate, unsubsidized or subsidized housing; or member has completed paperwork for alternative housing and is on waiting list.						
1 = Homeless, living in a shelter/short term housing/Living with a friend/family home short term or couch.						
2 = Rooming house.						
3 = Working, saving \$/access to security deposit, applying to housing program/section 8.						
4 = Employed, meeting with landlords, \$ for security deposit. Accepted for assistance and looking for safe place. Stable housing but may not be safe or permanent.						
5 = Healthy & Safe permanent housing.						
1	2	3	4	5	N/A	
<b>Child Care.</b> Affordable subsidized childcare is available; or reliable, affordable childcare is available with no need for subsidy.						
1 = No child care & has children under the age of 6.						
2 = Exploring child care options.						
3 = Accessing family, peer or day care part time.						
4 = Usually hasstable & safe day care for children when necessary. 5 = Stable, safe child care is available to enable member to work.						
1	2	3	4	5	N/A	
<b>Transportation.</b> Transportation is generally accessible to meet basic travel needs; or transportation is readily available and affordable; driver is licensed, car is adequately insured.						
1 = No Car, often does not have money for bus fare.						
2 = Un-registered car, poor condition, no employment, occasional bus fare						
3 = Uses public transportation without problems, possibly applied for bus pass						
4 = Owns a suitable car, works and the car is registered &/or on the road most of the time.						
Or usually has the means and knowledge to use public transportation when necessary						
5 = Person has a safe running car, registered, insured & working. Or Consistently uses public transportation with no problems.						
1	2	3	4	5	N/A	



**Daily Living Skills.** Member is able to provide beyond basic needs of daily living for self; or able to meet all basic needs of daily living without assistance. Member has people to rely on for social support.

**1 = Poor hygiene & reported diet. Does not have strong social support.**

**2 = Wants to become more stable but life is chaotic.**

**3 = Knows who to reach out to for social support, taking care of personal hygiene.**

**4 = Able to make appointments on time, makes follow-up calls, reliable.**

**5 = Able to meet all basic needs of daily living without assistance. Stable, has strong support system in place.**

1

2

3

4

5

N/A

**Other.**

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**TOTAL**

## **APPENDIX C**

### **Freshplace Member Assessment Manual: A Guide to the Theories, Techniques and Strategies Used at Freshplace to Encourage Changes in Behavior**

Matthew Brennan

A Public Health Capstone Project  
Submitted in Partial Fulfillment of the  
Requirements for the Degree of  
Master of Public Health  
at the  
University of Connecticut

2013

## **Freshplace Member Assessment Manual**

1. Introduction.....	2
2. Overview of Freshplace.....	2
3. Stages of Change Model.....	3
4. Determining What Stage.....	7
5. How People Move Between Stages (Process of Change).....	8
6. Importance and Confidence Rulers.....	10
7. Motivational Interviewing.....	12
8. Freshplace Member Assessment.....	13
9. Conclusion.....	14
10. Freshplace Member Assessment Form.....	15

## **Introduction**

Freshplace is an innovative food pantry that was created by a team of community partners to make a difference in the North End of Hartford, CT by increasing self-sufficiency and food security for its members. The purpose of this manual is to discuss Freshplace and how it differs from traditional food pantries, as well as review the health behavior theories and models used to help individuals who utilize Freshplace. This manual will hopefully serve as a guide to help other food pantries modify their approach to better aid individuals and families in need.

## **Freshplace**

In 2005, three community organizations in greater Hartford, Connecticut: Foodshare, Chrysalis Center, Inc., and the Junior League of Hartford, Inc. collaborated to develop a new type of food pantry called Freshplace. The goal of Freshplace is to provide a fundamental approach to the problem of hunger by addressing the root causes of poverty. In 2009, the three founding organizations formed a community-university partnership with the University of Connecticut to help design and evaluate the program. In July 2010 Freshplace opened.

Traditional food pantries typically provide pre-packaged bags of food to individuals and families that are in need of emergency food supplies. They often only provide food and do not offer additional services, such as referrals to other programs or help in applying for state or federal assistance. Freshplace is different in two ways. First, it is a client-choice food pantry where members can choose their own food. Second,

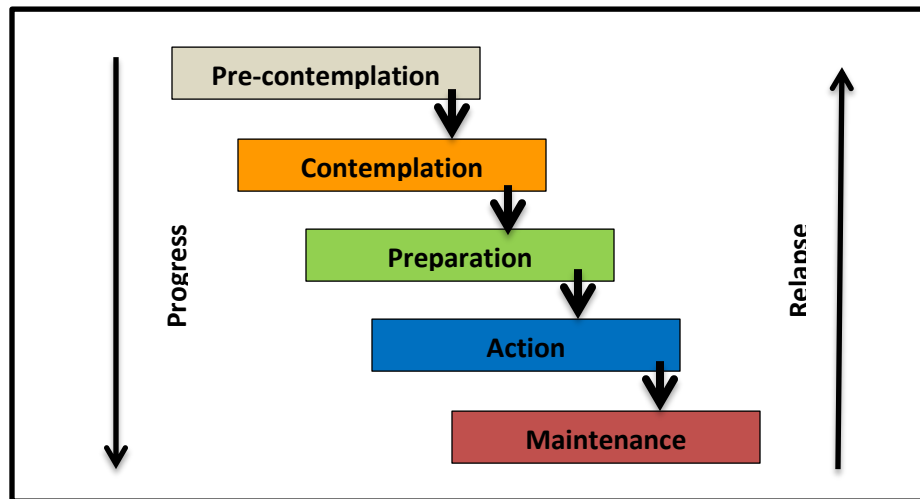
Freshplace offers case management services that help people obtain additional services as well as achieve a variety of goals to become more self-sufficient.

Individuals who attend Freshplace are called members, and they can shop at the pantry twice per month. Freshplace members meet with a project manager once per month to develop and monitor a Freshstart Plan, which tracks personal goals for becoming food secure and self-sufficient. At the initial meeting, the member and project manager discuss goals, as well as expectations and potential barriers to achieving them. The outcomes of these meetings are a series of small, realistic goals that will help lead to targeted behavior change.

At each session, the project manager uses a 3 page form called the Freshplace Member Assessment (see Attachment A), which is based on a behavioral change theory called the Stages of Change Model. The model recognizes that behavior change is a process that involves stages. Through the use of this model, the project manager is able to see how ready each individual is in changing his or her behaviors to become more self-sufficient.

### **The Stages of Change Model**

The Stages of Change Model helps to determine an individual's readiness to change to a healthy behavior. It looks at the decision making process involved in initiating a behavior change and the progression of five stages that a person goes through in making that change. The five steps of the Stages of Change are: Pre-contemplation, Contemplation, Preparation, Action and Maintenance. The figure below is an example of the model.



- 1) **Pre-contemplation** (not ready to change behavior): An individual has no intention of changing their behavior. They may not even see the behavior as a problem or may have failed at multiple attempts in the past to change the behavior. They are often uninformed or under-informed about the consequences of the problem.

*Example:* A person who has no interest in increasing the amount of fruits/vegetables they eat.

- 2) **Contemplation** (considering changing behavior): An individual who is aware that their behavior is a problem, but is not seriously considering doing anything about it immediately. They frequently realize the health benefits of changing the behavior, but are often overwhelmed by the problem and the effort, energy and sacrifice necessary to alter the behavior. People in the contemplation stage often have the desire to change their behavior in the next 6 months, but not immediately.

*Example:* An individual who realizes that eating more fruits/vegetables would benefit them and feels that one day they will eat more but has not started to.

- 3) **Preparation** (beginning to change behavior): The individual is intending to take action in the next 30 days. At this stage they have often already started to make small changes but have not made any significant changes yet.

*Example:* A person who starts to look at the produce in the store and may even buy some, but has not made any big changes to their diet.

- 4) **Action** (actively changing behavior): This is the point in time where the person is actively making the change to modify their behavior or environment. This stage lasts from the initial change (i.e. quit a bad habit or start a healthy habit) through the first 6 months after the change. The chance of relapsing back to the behavior is very high for the first 6 months.

*Example:* An individual has started to buy and eat more fruits/vegetables.

- 5) **Maintenance** (maintaining behavior change): At this stage the individual has successfully made the behavior change for over 6 months. As time goes on they are less likely to relapse and become more confident in their ability to keep the new behavior.

*Example:* The individual has increased the amounts of produce in their diet for over 6 months.

Termination is a 6<sup>th</sup> stage that is sometimes included as part of the Stages of Change model. Termination refers to the time period that follows Maintenance when an individual has consistently adopted a new behavior or stopped a previous bad behavior and has little to no concerns of relapsing. The Termination Stage is frequently not included because it is often not realistic to achieve. For example, a recovering alcoholic

may never consider themselves free of cravings or potential relapse and therefore never reach the Termination Stage; relapse to the old behavior is always possible.

Relapse is not considered a stage, but is a fact of changing behaviors. Individuals can fall back to a previous stage at any point in time, sometimes even multiple stages. This realization makes it important for counselors to observe where individuals are each time they sit down with them and be sensitive to signs of relapse.

This Stages of Change Model has been helpful in changing behaviors for a number of different health topics including: quitting smoking, stress management, weight management, physical activity and dietary changes. Initial results that have been collected since Freshplace started in 2010 show that this model has been helpful in getting members to achieve their goals. Below is a chart that provides characteristics of each stage, explains techniques that can be used when a member is at that particular stage and shows interventions that are used at Freshplace.

**Stages of Change Model:** Summary of the model and its use at Freshplace.

Stage of Change	Characteristics	Techniques	Freshplace Intervention
Pre-contemplation	Not currently considering change: "Ignorance is bliss"	Validate lack of readiness  Clarify: decision is theirs  Encourage re-evaluation of current behavior  Encourage self-exploration, not action  Explain and personalize the risk	Discuss High Priority areas from intake  Develop FreshStart Plan and goals  Refer programs  Introduce client choice pantry and fresh foods
Contemplation	Ambivalent about change: "Sitting on the fence"  Not considering change within the next month	Validate lack of readiness  Clarify: decision is theirs  Encourage evaluation of pros and cons of behavior change  Identify and promote new, positive outcome expectations	Discuss High Priority areas from last visit  Discuss FreshStart Plan and goals  Discuss programs and services



Preparation	Some experience with change and are trying to change: "Testing the waters"  Planning to act within 1 month	Identify and assist in problem solving re: obstacles  Help patient identify social support  Verify that patient has underlying skills for behavior change  Encourage small initial steps	Discuss progress in FreshStart Plan  Follow-up and referrals for programs and services  Build empowerment and self efficacy
Action	Practicing new behavior for  3-6 months	Focus on restructuring cues and social support  Bolster self-efficacy for dealing with obstacles  Combat feelings of loss and reiterate long-term benefits	Discuss progress in FreshStart Plan  Introduce new programs and services  Encourage social support
Maintenance	Continued commitment to sustaining new behavior  Post-6 months to 5 years	Plan for follow-up support  Reinforce internal rewards  Discuss coping with relapse	Celebrate progress in FreshStart Plan  Reinforce positive steps and social support
Relapse	Resumption of old behaviors: "Fall from grace"	Evaluate trigger for relapse  Reassess motivation and barriers  Plan stronger coping strategies	Reassess FreshStart Plan and goals  Build empowerment and self efficacy

### Determining What Stage

There are a few ways to determine what stage an individual is at in regards to changing a behavior. The first is reviewing the answers to four simple questions and the second is comparing the pros and cons of changing the target behavior.

The four questions to determine the stage are:

1. Are you seriously considering changing the target behavior in the next 6 months?
2. Are you planning on changing the target behavior in the next 30 days (possibly even taking small step right now)?
3. Are you actively trying to change your behavior?

4. Have you been working on changing the behavior during the last 6 months?

The members Stage of Change is determined by the following combination of answers:

Pre-contemplation: No to all 4 questions

Contemplation: Yes to question 1 and No to questions 2, 3 and 4

Preparation: Yes to question 1 and 2 and No to number 3 and 4

Action: Yes to first 3 questions but No to question 4

Maintenance: Yes to question 4

A second way to determine what stage an individual is at, can be done by writing down the pros and cons of the goal and making a list of the activities the member is completing and how long they have been working on them. The figure on the next page shows a decisional balance sheet that has been developed to help compare the pros/benefits of changing compared to the cons/costs.

**Decisional Balance Sheet:** A Tool to compare the pros and cons of changing a behavior.

	Pros/Benefits	Cons/Costs
Making a Change		
Not Changing		

How do the pros compare to the cons?

- 1) If no pros = Pre-contemplation Stage
- 2) If the cons are greater than pros = Contemplation Stage
- 3) If pros are greater than cons = Preparation Stage

How long has the individual been working on the activity (ex: obtaining health care benefits)?

- 1) If less than six months = Action Stage
- 2) If more than six months = Maintenance Stage
- 3) Have you stopped working on the activity? = Relapse

### **How People Move Between Stages**

There are a number of techniques and methods that help members move between the stages. The table on the next page reviews the 10 processes that are used with the Stages of Change to help change a behavior.

### **10 Processes of Change** (words or phrase in parenthesis are the formal terms)

11) Consciousness Raising	Efforts by the individual to increase their knowledge and awareness of the problem behavior.
12) Switch to Positive Behaviors (Counterconditioning)	Positive behaviors are developed to replace the problem behavior
13) Showing Emotions (Dramatic Relief)	Individuals experience and show the feelings and emotions they had with the problem behavior as well as feeling about the potential new behavior

14) Environmental re-evaluation	Review the impact the problem behavior had on one's environment (both physical and social)
15) Helping Relationships	Trusting and accepting the help and support of individuals who are helping with the behavior change
16) Rewards (Reinforcement Management)	Receive rewards for positive behavior change. Can be from oneself or someone else
17) Decision to Make the Change (Self-Liberation)	Choice and commitment to make the behavior change including self-confidence in making the change
18) Self-Appraisal (Self-Reevaluation)	Review the emotional and mental feelings and processes of going through a change in behavior
19) Social Alternatives (Social Liberation)	Knowledge and acceptance of alternative in the community that differ from the problem behavior
20) Environmental Control (Stimulus Control)	Gain control of specific 'triggers' in the environment that could cause relapse to the problem behavior. Could include avoiding certain people/places/things or changing the environment (remove things or add good 'triggers')

The project manager can choose from the 10 processes of change to find the most effective strategy for each particular member. Different approaches are more helpful at different times. For example, the project manager may want to use Consciousness Raising when an individual is at an early stage, such as Pre-contemplation or Contemplation, to help the individual increase their knowledge and awareness of the problem behavior. Techniques such as Rewards are more beneficial once the member is in the Active stage and in the process of changing their targeted behavior. Changing a

behavior can consist of a lot of emotional and sometime physical distress. Using a variety of appropriate techniques can make the process significantly easier.

### **Importance and Confidence Rulers**

Importance and confidence rulers are helpful ways to measure a person's readiness to change a behavior. As seen below, they are both on a scale form 0-10 measuring an individual's importance and confidence to change a behavior.

On a scale of 0 to 10, how IMPORTANT is it for you right now to change?										
0	1	2	3	4	5	6	7	8	9	10
Not at all					Extremely					
Important					Important					

The project manager will provide a member with a copy of this Importance Ruler and ask them, “On a scale from 0 to 10, where 0 is ‘not at all important’ and 10 is ‘extremely important,’ how important is it for you right now to change the (target behavior)?” After the member says where they are on the scale, the project manager will try to encourage change talk and ask the question, “Why are you at an X and not at 0?” Discussing why an individual is not starting at 0 provides the opportunity for the individual to realize they have already changed a little and helps reduce resistance talk about defending where they currently are. The project manager can then ask, “What would need to happen for you to get from X to X+1 or X+2?” These follow up questions allow the member to reflect upon what would have to be present to increase their willingness to change.

After the importance of changing the target behavior is determined, the project manager provides the member with a Confidence Ruler and asks the member on a scale from 1 to 10 how confident are they to make the change?

On a scale of 0 to 10, how CONFIDENT are you that you could make this change?										
0	1	2	3	4	5	6	7	8	9	10
Not at all					Extremely					
Confident					Confident					

The Confidence Ruler is measuring the individual's belief in their ability to change the target behavior. The project manager then follows up with the two questions asked above: "Why are you at an X and not at 0?" and "What would need to happen for you to get from X to X+1 or X+2?" Similar to above, these follow up questions allow the member to reflect upon what they have done about changing the behavior and what may need to be done to increase their confidence in changing the behavior.

The Importance-Confidence Rulers are quick and efficient ways to measure an individual's readiness to change a target behavior, what steps they have taken to get to where they are now and what they may need to do to have a successful change. Both the project manager and the member can use this tool to see where efforts need to be applied to help the individual change. If an individual rates changing a behavior as low importance then it is often beneficial to weigh the costs and benefits or pros and cons of the behavior. If changing the targeted behavior is rated as high importance, then the project manager can work with the member on building confidence to overcome barrier to change. In either case the project manager can chose from the 10 processes of change to determine the most effective approach to helping the member.

## **Motivational Interviewing**

The project manager at Freshplace also uses motivational interviewing to encourage behavior change. Motivational Interviewing is a person-centered form of guiding individuals in strengthening their motivation to change a behavior. It focuses on looking into and resolving ambivalence about the topic. For example, an individual may be ambivalent, or have mixed feelings, about changing a certain behavior such as eating more fruits and vegetables. They may feel equally for and against adding more fruits and vegetables to their diet. The project manager could use motivational interviewing to help them to see the potential negative results of not changing their diet as well as the possible positive effects of eating healthier. A key part of motivational interviewing is to understand how the person feels about the specific behavior and meet them where they are as opposed to trying to force them to change. The person has to look within themselves to find the desire to want to change a behavior.

Counselors' main task in motivational listening is to listen and try to understand what the individual is saying. When they need to ask a question to help guide the conversation it should be open ended so as not to leave awkward responses of just a 'yes' or 'no'. Summarizing what the person is saying and acknowledging their statements helps build a rapport and is part of the process of having the individual realize the necessity to take a step to the next stage of change. Changing behaviors often comes with a lot of internal and external resistance. Motivational interviewing is non-confrontational and the project manager needs to roll with resistance. If an individual becomes angry or upset about a certain topic, it is best for the project manager to use reflective listening and acknowledge the person's feelings and realize that the topic

bothers them. Reflective summary statements such as “It seems like you were bothered by ....” show the counselor was listening and understands the client’s resistance to the topic.

The project manager at Freshplace determines each member’s readiness to change through using the member assessment form that utilizes the Stages of Change Model. After determining which stage the member is at, he would be able to use motivational interviewing to help motivate the individual into weighing the pluses and minuses of progressing to the next stage. As individuals move through the various stages counselors are able to support self-efficacy, meaning increase individuals’ self-confidence about their abilities.

When the project manager would meet with members, he originally wrote detailed case notes at each visit. While this is a traditional function of a case manager, it was time consuming and difficult to compare outcomes between members to see if they were effectively making changes. The Freshplace Steering Committee was interested in an assessment form to monitor change and be able to report outcomes in a timely fashion. In order to streamline the process of determining a member’s stage of readiness in 12 key areas, an Assessment form was developed by the project manager, development director at Freshplace and the lead University researcher.

### **Freshplace Member Assessment**

The Freshplace Member Assessment includes 12 topic areas that the project manager discusses with members each month. The topic areas are: food, entitlements/benefits, other assistance (i.e. utilities), education, employment, health care,



health and nutrition, mental health and substance abuse, housing, child care, transportation, and daily living skills. These areas were chosen based on the goals of Freshplace to increase food security and self-sufficiency, and based on the project manager's experiences working with members for over one year.

The assessment assists the project manager in determining what stage or level an individual is at in regards to needing potential services for each of the 12 topic areas. The top of the assessment has a space that defines the rating scale the project manager uses: 1) problem, not ready (pre-contemplation); 2) contemplation; 3) building capacity (preparation); 4) in progress (action); 5) received/achieved (maintenance); or N/A if non-applicable.

A "1" represents an individual who is not ready to make a change and a "5" would be for members who have received/achieved their goal for that topic. For example, for the food category, a rating of "1" would be for members who visit a food pantry multiple times a month, have no SNAP (formerly Food Stamps) benefits and worry about food more than just at the end of the month. In this same category, a rating of "5" would be for individuals who have access to enough food every month, prepare low cost meals and have a balanced food budget.

Attached is the three page form the project manager at Freshplace uses. The form includes a description of how he interprets the rating scale for each of the 12 core topic areas.

## **Conclusion**

This manual was created to describe Freshplace and how it differs from traditional food pantries, as well as review the health behavior theories and models that are being used to help individuals who utilize Freshplace. This manual will hopefully serve as a guide to help other food pantries modify their approach to better help individuals and families in need. Formal training would be necessary to become proficient at using Stages of Change Model and motivational interviewing. Courses, trainings and seminars that discuss these theories and techniques are often available.

Freshplace is an innovative project striving to make a difference in the community. Evaluation of the program is an ongoing process; however initial results show that Freshplace is making a positive difference.

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